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MEDICAL WASTE AND OCEAN POLLUTION RESEARCH AND MONITORING

HEARING

BEFORE THE

SUBCOMMITTEE ON NATURAL RESOURCES,
AGRICULTURE RESEARCH AND ENVIRONMENT

OF THE

COMMITTEE ON
SCIENCE, SPACE, AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDREDTH CONGRESS

SECOND SESSION

OCTOBER 3, 1988

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MEDICAL WASTE AND OCEAN POLLUTION RESEARCH AND MONITORING

MONDAY, OCTOBER 3, 1988

U.S. House of Representatives,
Committee on Science, Space, and Technology,
Subcommittee on Natural Resources, Agriculture
Research and Environment,
Annapolis, Md.

The subcommittee met, pursuant to notice, at 9:00 a.m. in the Joint Committee Hearing Room, Legislative Services Building, 90 State Circle, Annapolis, Maryland, Hon. James H. Scheuer [chairman of the subcommittee] presiding.

Mr. Scheuer. Good morning. The Subcommittee on Natural Resources, Agriculture Research and Environment will come to order. We are thankful for the very kind and generous welcome that we have received here in Annapolis. We are particularly honored to have the Governor of this great State here testifying before us, giving us the benefit of his wisdom and his experience and insights. We are delighted to have his two aides, Dr. Bonner and Mr. Walsh.

Today, of course, we are going to be considering the problem of medical waste and ocean pollution. From Long Island Sound, where I hail from, to New Jersey, Maryland, even the State of Texas, our shores are under assault from medical wastes which defile our beaches and degrade our environment and assault our psyche and our consciousness. Seldom has a species of environmental pollution come along which we find so revolting, so personally offensive, as this business of medical wastes degrading our beaches and degrading our lives.

This summer's medical waste is the latest and most visible sign of the serious ocean pollution problems which confront our Nation. Clearly we must move expeditiously to control medical waste and other pollutants and to prevent them from destroying and degrading our coastal environment.

Now we have a dual purpose here today at this hearing. First we are going to consider the troubling issue of medical waste that is washing up on our shores, and we are going to consider appropriate medical waste management programs to prevent this unseemly and degrading blight from destroying our coastline. Second, we are going to be considering the issue of ocean pollution research and monitoring in general, a subject in which our committee has taken a continuing interest over the years.

We seek to achieve passage of two bills that are pending before our subcommittee: H.R. 4210, to reauthorize Title 2 of the Marine

Protection, Research and Sanctuaries Act; and H.R.—that stands for House of Representatives— 4211, a bill to reauthorize the National Ocean Pollution Planning Act.

Now in recent years your Congressman, Tom McMillen, has been one of the most active, thoughtful, professional, creative and contributing members of our subcommittee. You really sent us a winner when you sent McMillen to Washington. With your indulgence—Tom is an absolute expert on ocean pollution, especially the pollution of the Atlantic Coast, he is an expert on the Chesapeake Bay, he has shown dynamic leadership in addressing these issues on behalf of the subcommittee and showing us the way. I am going to request Congressman McMillen to take the gavel and Chair this hearing.

Even beyond ocean pollution, he has shown a very professional and knowledgeable interest in a broad number of issues ranging from biotechnology and space commercialization to railroad safety and environmental quality. He is a tremendously valuable member of our subcommittee and our full committee, the Science, Space and Technology Committee, and I want to thank all the citizens of this State for the quality, the superb quality of this man whom they sent to represent them.

So let me say again, Governor, how glad we are to have you appearing before us with your two aides; how glad I am to be in this great City of Annapolis; and I would like to hand the gavel over to Congressman McMillen.

Congressman?

Mr. McMillen. Thank you, Mr. Chairman, for placing that enormous burden on my shoulders.

Mr. Scheuer. Well, they may not be broad but they're awfully high. They're broad, too, and you'll handle it.

Mr. McMillen. Well, it's a pleasure to have you here today, Mr. Chairman, and I want to thank you for agreeing to hold this field hearing in Annapolis on a very, very important public policy dilemma that we are facing, not only here locally but across the country, in the proliferation of medical waste. I am also pleased that our Governor is here, as well as two other witnesses. We are looking forward to these field hearings to take a good look at the extent and the dimensions of this problem across the country. I appreciate all the expert witnesses that are here today.

Medical waste has become an all too common occurrence lately, not only on the Chesapeake Bay but nationally. This summer we were assaulted in news stories about vials and syringes washing ashore, not only on the Bay and in Anne Arundel County but really across America.

I was reading the newspaper just the other day, and I was reading about how some physicians had dumped some syringes in a waste can in Youngstown, Ohio. A bunch of kids went and picked them up and started to play doctor with those syringes, injecting themselves. Luckily for those children, there was nothing too dangerous in those syringes, but the point is very clear: We have many of these horror stories today and we need some immediate answers.

By last estimate, over 2 million tons of infectious medical wastes are generated each year. At the same time, States and municipalities are poorly equipped to combat the situation. This is really because we do not have the research base to fully understand the extent of the medical waste problem or the associated health risk. This is further complicated by ambiguous definitions of medical and infectious waste by both Federal and State authorities.

The result is that States are forced to resolve the problem themselves, often unilaterally, because of inadequate Federal regulatory involvement. I hope that we can delve into the reasons for the Environmental Protection Agency's sluggishness in responding to this national crisis, and why Federal agencies have shied away from needed research projects on this topic.

Today we will attack the problem from these two directions: First we will examine how the State of Maryland, under the leadership of Governor William Donald Schaefer, has moved expediently and aggressively to update State medical waste regulations. Certainly there is much that Federal regulators can learn from the informed and resolute policy choices that the Governor has made.

Second, we will examine how medical waste fits into the broader and more compelling problem of ocean pollution. It has become clear that our oceans are perilously close to reaching their capacity to absorb our waste products. The time is now for us to carefully assess our Nation's ocean pollution laws to determine if refinements are necessary.

Today we will hear from experts on sections of two bills that fall under this subcommittee's purview: H.R. 4210, the Marine Protection, Research and Sanctuaries Act, and H.R. 4211, the National Pollution Planning Act. Both of these pieces of legislation require action by this subcommittee as part of the reauthorization process.

There is no question that a great deal of concerted planning and effort will be required to solve the array of ocean pollution problems, especially medical waste. But first, we must make sure that we start with a proper base of information and that leadership in the regulatory arena emanates from the Federal level. This will ensure that we proceed with an appropriate policy response.

In closing, I would like to welcome you all to Annapolis, referred to in a recent National Geographic Magazine as "the Camelot of the Chesapeake." I know that I speak for the Chairman in saying that we look forward to the thoughtful words of our expert panelists.

Let me move ahead to our first panel, but before doing so I would like to welcome and introduce one of my freshman colleagues in Congress, Congressman Joel Hefley from Colorado, who is also a member of this subcommittee.

Joel, thank you for joining us today. Before proceeding with the witnesses, do you have an opening statement?

Mr. HEFLEY. Thank you, Congressman McMillen. I think you summed it up very, very well with your opening statement. I think we have an extremely serious problem here with our oceans, not just this Nation but around the world. I think the medical waste is just the tip of the iceberg, but it's something that we need to look into. We can't tolerate this. The resources of our oceans and the survival of mankind go hand-in-hand, and we need to get on with trying to solve this problem, so I think you outlined it well.

I would mention that I was asked by Congressman Lujan and Congresswoman Schneider and Congresswoman Morella to mention that they do have statements and they would like those submitted for the record.

Mr. McMillen. With no objection, so ordered. I again appreciate your coming over today, Joel.

[The prepared statements of Representatives Lujan, Schneider and Morella, follow:]

STATEMENT OF HON. MANUEL LUJAN, JR. (R-NM)

HEARING ON MEDICAL WASTE AND OCEAN POLLUTION RESEARCH AND MONITORING ANNAPOLIS, MARYLAND

October 3, 1988

Mr. Chairman, I congratulate you for holding the hearing this morning on the timely and important topics of medical waste and ocean pollution research and monitoring. I also want to thank you for receiving Administration testimony on H.R. 4210, which reauthorizes Title II of the Marine Protection, Research and Sanctuaries Act, and H.R. 4211, the National Ocean Pollution Planning Act Reauthorization.

H.R. 4210 and H.R. 4211 were introduced on March 21, 1988, and were referred to the Committees on Merchant Marine and Fisheries and Science, Space, and Technology. On March 23, 1988, the two Merchant Marine subcommittees of jurisdiction met in joint session and ordered H.R. 4210 and H.R. 4211 reported by voice vote to the full Merchant Marine Committee. The full Merchant Marine Committee held markups of the bills on April 14, 1988, and ordered them favorably reported without amendment by unanimous voice vote. Neither the Merchant Marine committee nor the Merchant Marine subcommittees held hearings on these bills prior to the markups. Indeed, today is the first hearing in the House of Representatives on these bills.

H.R. 4210 and H.R. 4211 are scheduled to be considered by the House later today on Suspension, and it is important, both procedurally and substantively, that the Subcommittee receive the Administration's input on these bills at this hearing.

I want to express my concern about the funding levels and policy implications of the language contained in both H.R. 4210 and H.R. 4211.

H.R. 4210, as reported by the Merchant Marine Committee, authorizes $12.0 million in FY 1989, and $13.0 million in 1990. Secretary of Commerce Verity, in his June 16, 1988, letter to Speaker Wright requests $4.552 million for FY 1989 "and such sums as may be necessary for FY 1990." The FY 1989 authorization level in H.R. 4210, as reported by the Merchant Marine Committee, is 163.56 percent above the request level.

H.R. 4210, as reported by the Merchant Marine Committee, also contains 2 sections of bill language not requested by the Administration. Section 1 requires the Secretary of Commerce to ensure that the comprehensive and continuing research program conducted under section 202(a) of title II is consistent with the comprehensive plan relating to ocean pollution developed under section 4 of the National Ocean Pollution Planning Act of 1978 (33 U.S.C. 1703). Section 2 requires the Under Secretary for Oceans and Administration (the Administrator of NOAA) to report to Congress on or before October 31 of each year on the specific programs (including funds allocated to these programs) that NOAA and the EPA carried out under title II in the previous fiscal year. Secretary Verity, in his June 16, 1988, letter to Speaker Wright stated that "The Administration continues to support" legislation which excluded such language.

H.R. 4211, as reported by the Merchant Marine Committee, authorizes $3.75 million in FY 1989, and $4.0 million in 1990. Secretary Verity, in his June 20, 1988, letter to Speaker Wright requests $3.37 million for FY 1989 "and such sums as may be necessary for FY 1990." The FY 1989 authorization level in H.R. 4211, as reported by the Merchant Marine Committee, is 11.3 percent above the request level.

H.R. 4211, as reported by the Merchant Marine Committee, also includes language not requested by the Administration, and excludes language requested by the Administration. Specifically, the Secretary of Commerce, in his June 20, 1988, letter to Speaker Wright requested language that would "restore the budgetary oversight role for ocean pollution programs to the President, without diminishing the National Ocean Pollution Policy Board's advisory capacity. The Policy Board's current, and proposed future, budgetary oversight role violates the separation of powers' doctrine and diminishes the President's ability to present a unified budget." H.R. 4211 does not include the provisions requested by the Secretary.

I am interested in hearing the Administration's current positions on H.R. 4210 and H.R. 4211 with regard to both the authorization levels and the policy language.

STATEMENT BY THE HONORABLE CLAUDINE SCHNEIDER
HEARING ON MEDICAL WASTES AND OCEAN POLLUTION

ANNAPOLIS, MARYLAND
OCTOBER 3, 1988

I WANT TO THANK CHAIRMAN SCHEUER FOR THE OPPORTUNITY TO REVIEW SEVERAL IMPORTANT ISSUES RELATED TO MARINE RESOURCE PROTECTION. OCEAN POLLUTION CAN COME IN MANY FORMS. TODAY'S HEARING WILL PERMIT US THE OPPORTUNITY TO CONSIDER TWO OF THE MOST ALARMING, ILLEGAL DUMPING OF INFECTIOUS MEDICAL WASTES AND DISPOSAL OF MUNICIPAL SLUDGE AT THE 106-MILE SITE.

THIS SUMMER IN MANY PARTS OF THE COUNTRY INCLUDING RHODE ISLAND, VACATIONS WERE MARRED BY THE WASHING ASHORE OF A VARIETY OF OFFENSIVE AND POTENTIALLY DANGEROUS MEDICAL WASTES SUCH AS SYRINGES, PLASTER CASTS, DISCARDED BANDAGES, AND VIALS OF BLOOD. ALTHOUGH IT IS CURRENTLY ILLEGAL TO DUMP MEDICAL WASTES IN THE OCEAN, IT HAS BEEN DIFFICULT TO PREVENT THESE ACTIONS BECAUSE OF INEFFECTIVE TRACKING OF THESE WASTES AND PENALTIES THAT ARE TOO LAX. CONGRESS SHOULD ACT AS QUICKLY AS POSSIBLE TO CORRECT THIS PROBLEM. I HOPE THAT THIS HEARING HELPS TO SPEED ACTION, AS IT BECOMES APPARENT THAT THE ILLEGAL DUMPING OF MEDICAL WASTES IS NOT LIMITED TO ONE PART OF THE COUNTRY, BUT IS A WIDESPREAD AND IMMEDIATE THREAT IN MANY PLACES.

WE WILL ALSO HAVE AN OPPORTUNITY TODAY TO HEAR TESTIMONY ON TWO SPECIFIC PIECES OF LEGISLATION: H.R. 4210, WHICH REAUTHORIZES TITLE II OF THE MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT, AND H.R. 4211, REAUTHORIZING THE NATIONAL OCEAN POLLUTION PLANNING ACT. I SUPPORTED THESE TWO PROPOSALS AS A MEMBER OF THE MERCHANT MARINE COMMITTEE EARLIER THIS YEAR WHEN THEY WERE PASSED BY THAT COMMITTEE. I HAVE ALSO SUPPORTED HOLDING HEARINGS IN THE SCIENCE, SPACE AND TECHNOLOGY COMMITTEE SO THAT REAUTHORIZATION OF THESE VALUABLE PROGRAMS COULD BE COMPLETED. I WANT TO THANK CHAIRMAN SCHEUER AGAIN FOR THIS OPPORTUNITY TO EXAMINE THE NEED FOR THESE PARTICULAR BILLS AND THE ADMINISTRATION'S POSITIONS ON THEM. I ANTICIPATE THAT HIS RESPONSIVE LEADERSHIP AT THIS TIME WILL PERMIT THE HOUSE TO ACT ON THESE BILLS LATER TODAY OR TOMORROW.

OF PARTICULAR CONCERN TO MYSELF AND THE STATE OF RHODE ISLAND IS THE NEED TO CEASE THE DUMPING OF MUNICIPAL SLUDGE AT THE SO-CALLED 106-MILE SITE. ALTHOUGH THIS PRACTICE IS BEING ADDRESSED IN SEPARATE LEGISLATION THAT I EXPECT TO BE SIGNED INTO LAW SOON, H.R. 4210 AND H.R. 4211 HAVE IMPLICATIONS FOR THIS PRACTICE. RESPONSIBILITIES UNDER TITLE II INCLUDE THE CHARGE TO MONITOR AND STUDY THE EFFECTS OF OCEAN DUMPING AND TO RESEARCH ALTERNATIVE DISPOSAL METHODS. NOPPA REQUIRES THE DEVELOPMENT OF A FIVE-YEAR PLAN FOR OVERALL FEDERAL OCEAN RESEARCH POLICY. THE ENACTMENT OF A BAN ON OCEAN DUMPING WILL MAKE THE ACTIVITIES OF THESE TWO PROGRAMS MORE IMPORTANT THAN EVER. WE MUST DETERMINE ONCE AND FOR ALL THE DAMAGE THAT HAS BEEN DONE TO MARINE RESOURCES BY SUCH PRACTICES AND PROVIDE ECONOMICAL ALTERNATIVES FOR THE DISPOSAL OF THESE WASTES.

ALTHOUGH THE ADMINISTRATION SUPPORTS REAUTHORIZATION OF THESE PROGRAMS, IT HAS MADE SPECIFIC OBJECTIONS TO H.R. 4210 AND H.R. 4211. THIS HEARING WILL ALLOW US TO HEAR AND CONSIDER THESE OBJECTIONS.

Constance A. Morella

STATEMENT BEFORE THE SCIENCE, SPACE, AND TECHNOLOGY'S SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE RESEARCH AND ENVIRONMENT ON MEDICAL WASTE AND OCEAN POLLUTION RESEARCH

MONDAY, OCTOBER 3, 1988 IN ANNAPOLIS, MARYLAND

by CONSTANCE A. MORELLA, M.C.

Mr. Chairman: The news today is both bad and good. On the one hand, the very recent rash of medical wastes turning up on our shores, including hypodermic needles, is a shocking new assault on the Chesapeake Bay. Strangely, it was unheard of five years ago, when, in December 1983, the Chesapeake Bay Agreement was signed by the Governors of Maryland, Virginia, Delaware, Pennsylvania, and the Mayor of the District of Columbia.

But the good news is that we have in place a regional agreement, committed to managing the Chesapeake Bay as an integrated ecosystem. As part of this agreement, the federal government, through the Environmental Protection Agency, is committed to produce a "federal facilities strategy for point sources, nonpoint sources, for nutrients, toxics and conventional pollutants." The significance of this is that we now have a way of dealing with our newest source of pollution, medical wastes, that can and should be a model for the rest of the country.

Nationally, as I am sure you all know, the EPA announced on September 1st the establishment of a task force under the direction of Acting Deputy Administrator John Moore to coordinate all agency activities related to the problem of medical waste. Assistance will be provided by the recent legislation authorizing the EPA to establish a demonstration program which will track medical wastes generated and disposed of in New York, New Jersey and Connecticut. However, most medical wastes are produced in small quantities by doctors' offices, clinics, and household users and would still not be regulated, so some aspects of the task force's job may be difficult.

I want to urge today that we work for a consistent national approach. EPA currently has guidelines on infectious waste, but not all states have laws on the subject and those that do differ. Fragmented regulation would invite subversion of a system of cooperative enforcement pertaining to the basic laws of sanitation, waste disposal and the orderly processing of materials. It will invite violators to take their wastes to a neighboring jurisdiction, and it will signal a lack of Congressional commitment to correcting the situation we find today.

Our oceans must not continue to be thought of as boundless receptacles for used and useless items, nor, of course, should our landfills. I would urge minimal but precisely defined laws controlling the disposal of medical wastes. Perhaps it is time to begin to consider the lifetime of the manufactured goods, beginning with the tools and equipment that are necessary to make the product, and ending with its disposal. We have recently given consideration to lifetime accounting for the energy effect of a product--why shouldn't this long-term planning apply to all manufactured goods. Perhaps by adding an assessment of the environmental effects of the entire manufacturing process, we can begin to better control our environment.

I appreciate, Mr. Chairman, the opportunity to share my concerns with you, and I pledge my support for effective regulations that will be successful and timely in working to clean up our waters.

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Mr. McMillen. As we move to the first panel, I want to again thank the Governor for coming. Let me make a brief comment and say that he has been always a leader and innovative, and I think he has always been able to face important challenges with, I think, a "can do" approach, and I think he has certainly shown that in this case, not only as Mayor of Baltimore for 15 years but as our 58th Governor as well.

We are looking forward to your testimony, as to your thoughts on this issue, and we are also pleased that Marty Walsh, the Secretary of the Environment, is here to join us, as well as Dr. Frank Bonner, the Deputy Secretary of Public Health Services of the Department of Health and Mental Hygiene.

Without further ado, Governor, why don't you proceed with your testimony?

STATEMENT OF HONORABLE WILLIAM DONALD SCHAEFER, GOVERNOR OF THE STATE OF MARYLAND, ACCOMPANIED BY: DR. FRANK BONNER, DEPUTY SECRETARY OF HEALTH, DEPARTMENT OF HEALTH AND MENTAL HYGIENE; AND MR. MARTIN L. WALSH, JR., SECRETARY OF ENVIRONMENT

Governor Schaefer. Mr. Chairman and members of the committee, first of all let me welcome you to Annapolis and thank you for coming here. One of the things that I have continually suggested is that congressional committees should make field trips, actually see what is happening in cities and counties and States. A number of years ago when I was Mayor, I used to invite as many Members of Congress as I could possibly get to go over to Baltimore to see what we were doing, see how we were spending their money, and to tell us, if we weren't spending it right, to tell us why, and if we weren't spending it right, then it could be used elsewhere.

You're right, Congressman Tom has been a great addition to our congressional delegation. As Governor, I have been extremely lucky to have a congressional delegation that works very closely with me, and I with them, both on the Senate and the House side. That is the only way you can get things accomplished. You can't have the Governor fighting the congressional delegation and the delegation fighting the Governor. The only way you can work is to work together, and I have been very lucky. One aspect that you didn't mention is that Congressman McMillen is a proponent of small business, and when he ran, one of his campaign efforts was in the area of small business, which is really the bedrock of our economy, and I commend him on that.

Before I get to the prepared statement, I would just like to make a few comments. First of all, now is the time to do something on this. It is not 2 years from now or 4 years from now or 10 years from now. There is a possibility of being able to prevent the problem before it becomes an absolute major catastrophe as far as our counties and our States are concerned.

Two other things: One, when a syringe rolls up on a beach, that is a warning to all the people that are down on the beach that there are problems, and people will stay away in droves, absolutely in droves, as soon as the first report is made of a syringe. We had that, and luckily in Ocean City only a very, very limited number of these materials were on the beach, and we think they were possibly just placed there and it really wasn't a serious problem. The serious problem was in the Inner Harbor, where you had the syringes that were tested, the blood was tested and the material was tested, and that caused a slight panic.

The second is the concern by small business people in biotech that they are going to be put upon if we put too many regulations on as far as disposal of hazardous waste is concerned. I don't believe that at all. I do not believe that. I think that the companies who are disposing of the medical waste in the proper way, it won't cost them that much more to comply with reasonable regulations, and we are trying to work in that area of economic development. It is very important that you don't discourage industry, but that you don't just make it so easy for them to dispose of it, just throw it all over the countryside.

I want to thank you very much for visiting us today with a topic of great concern to everyone in our State. We want to be able to have some answers, some solutions. Representative McMillen has been a good friend and has done really a superb job over in Washington, and we are very pleased. We would have liked to have had him on the Olympic basketball team that played the Russians, but unfortunately he couldn't make it. We hope that maybe in 4 years he will be back playing on our team and we'll win the gold medal.

In the summer of 1988 many of you will remember pictures of garbage and waste washing up on the shores of our ocean. It was not very pleasing for us and it caused us great concern. We think that Maryland has one of the best programs in the country to regulate disposal of medical waste. Marty Walsh and Adele Wilzack and Dr. Bonner have been instrumental in working together with Federal and State authorities to develop what we think is an excellent plan.

I think the point that I want to again emphasize is, we want to prevent the problem. The problem is here, but it isn't totally out of hand yet. We can still have time to be able to do something, and now is the time to do it. Hospitals, clinics, and nursing homes and doctors' offices in the United States produce more than 2 million tons of infectious waste every year; closer to home, in the Baltimore area about 25 tons of infectious waste each and every day, and that is infectious waste. We produce about 50 tons of noninfectious medical waste, also. It's a big challenge.

Like many other States, our laws in Maryland did not give us control that we needed. Our laws treated medical waste the same way as they treated ordinary litter. It just didn't work, so on September 30th we imposed a new emergency regulation to require the safe disposal of all medical waste. These regulations are far more stringent than any others in the country right now.

We have had excellent cooperation getting these regulations moving. When you propose a regulation, it takes time before you are able to get it moving, but because of the urgency of the situation, our legislature moved rapidly.

Now under these new regulations, we treat medical waste the same way as we treat the disposal of hazardous waste. We can impose tough penalties on those who put our environment and people at risk.

Our new regulations do four things: First, they define medical waste as a special category of hazardous waste, and this is important because all generators of special medical waste are now required to secure a medical identification number and we know where the waste was produced.

Two, they establish a manifest system for tracking medical waste. We will be able to follow this waste through the first phase and every phase from the generator through transportation, treatment, storage, to its final disposal. The Department of Health and Mental Hygiene has also outlined standards on packaging, on labeling, and on how long the waste can be held.

Three, they require State certification and bonding for those who transport medical waste, allowing for us to tighten control over those who actually dispose of the waste. And, finally, they raise the penalty for those who handle or mishandle medical waste. The first offense, for example, you will be fined $25,000 and one year in prison—just penalties, but these are the tools that we need.

Now will this solve the problem as far as we are concerned? No, it will not. It will give us the ammunition we need to prosecute those who are tempted to dump, and I think after two cases with heavy fines and penalties we will see the difference.

What else do we need? What do we need from you? What do we need from the Federal Government? We have gone a long way in Maryland to control the problem within our State, but we cannot stop waste from other areas from washing up on our shores. We need uniform and acceptable national standards. We need an overall policy involving every level of Government.

Right now there are serious shortcomings at the Federal level. The Federal level, the Federal Government, has issued guidelines for medical waste but there are no teeth in the guidelines. They are not mandatory, and there is no enforcement mechanism. States have been left on their own to develop regulations, and you can see the problems that that can cause. Facilities in States with strict controls might find it easier to shift their waste to States where their policy is very lax, and this could result in another summer like we had last year, when citizens were actually afraid to go to the beach.

Unfortunately, there is a tendency to think we can solve problems by taking care of one part. The threat to our waters is much larger than medical waste. We need to think about an overall policy that will protect the waters, and right now in Maryland we are concentrating many of our resources on cleaning up the Chesapeake Bay. We have seen results, and one of the reasons is because we are working on many fronts: better sewage treatment facilities, sewage dumping, solid waste disposal, offshore incineration, shoreline erosion.

My good friend Governor Baliles, who is the new chairman of the National Governors Association, formed a special task force on ocean pollution, and we are working on that. We are looking into all the areas. We want to develop guidelines to help States solve the problems of ocean dumping and ocean pollution and improve our waterways.

Now let me just summarize. There are two things: The State must take the leadership as far as the localities, the counties and the cities, are concerned. There isn't any question about that. We can't mealymouth around and just say that this isn't an important problem. We have to understand that it's a serious problem, and we can't treat medical waste and hazardous waste as ordinary litter. We can't do that. We have to separate it. We have to enforce the penalties, and I think one or two prosecutions and you will cut down on the problem of medical disposal.

One of the things that I would do if I were in the business, I would ask the Governor, "Where am I going to put this stuff? There is no place to put it." We have a hazardous waste land disposal unit right now, ready to handle any of this problem that we have, so we have done our part.

The other side is, on the Federal level, we do need the Federal Government to make some of these laws mandatory on all the States, so that Maryland won't have tough laws, and the State above us easy laws, and they come down here and dump it down here or take it someplace else or just dispose of it in an easy way.

The third is to make us all conscious of the problem. It is a serious problem, as we are trying to make everyone aware of the problems of cleaning up Chesapeake Bay, and let me commend you for coming into the Maryland area, and particularly Annapolis. All you have to do is go down to Annapolis, go down to the city itself, and see the booming economy down there, and see if this hazardous waste, the syringes and all the rest, started floating in, you would have an exodus down there like you've never seen. There is no reason. That does not have to happen, if we are tough on enforcement, regional on enforcement, and we do it, and we can do it.

Thank you very much.

Mr. McMillen. Thank you, Governor.

We have a number of questions for you and for some of your cabinet people who are here today. Do you have a comment, Marty or Frank? Do either of you have a statement?

Governor Schaefer. I think they want to answer the questions for me.

Mr. McMillen. Let me start out by asking a question that has to do with, I think you pointed out first of all, that clearly if we don't have some sort of Federal guidelines, that you could do the best job and do it very well here in Maryland, but if the State contiguous to us is not doing that, you would have problems resulting from that. In some gf the waste we have seen dumped on our shores, I know in Anne Arundel County there was an attempt to do some kind of tracking gf that waste. Do you have any data as to the source of medical waste that has been dumped on Maryland shores this summer?I21Mr. Walsh. We are continuing the analysis of that, Congressman, but at this point we are not able to identify the generator.

Mr. McMillen. Turning to another question, I guess this past few days we have been reading about the high bacterial count off the coast in the Atlantic. Obviously I know that you have been taking some samples and some data down there as well. Have you reached any conclusions as to the source of that? The reason I ask that is, we have a number of bills in Congress right now. I don't know if that bacteria relates to any sort of ocean dumping, or is it a sewage treatment problem or the like? I would be interested in your thoughts on that.

Mr. WALSH. We have been working with the State of Delaware now since the beginning of last week. We have gotten some preliminary readings which we have shared with the press as well as with Delaware, and that has been working both in the counterpart of Health and Mental Hygiene and the Department of the Environment in the State of Delaware. We took a second set of readings Saturday. Those results are not in right now, and we expect today a number of the conclusions, at least the data results from the Delaware testing, should be there today.

Some of the things that may have been immediate sources of that are the sewage treatment plants in Delaware and the potential for our own in Ocean City. At this point we have verified that the Ocean City plant is not the source, has not been the source, and is functioning properly, and we have the same report from Delaware. So that what we will be doing, based on our readings that we will get today, we may move further out to sea and see if we can develop some kind of a contour in terms of that fecal coliform reading, and see if we can trace it back via a back path that we might be able to develop.

Mr. McMILLEN. And so obviously you don't rule out the possibility of ocean dumping as the cause here.

Mr. WALSH. No, sir. It certainly appears at this point that it is coming from offshore. We have no reason to think it is coming from Delaware or from Maryland at this point.

Mr. McMILLEN. This is particularly timely for us in the Congress because there are two or three pieces of legislation that would absolutely ban ocean dumping, that we will be hopefully considering in the next few days.

Governor SCHAEFER. Congressman, one of the problems with talking about offshore dumping, now I have kept in pretty close touch with the Mayor of Ocean City because it's a heavy economic factor. It is very, very important for the town of Ocean City to maintain this tremendous economic generator, and every time there was a story in the paper about offshore dumping or pollution, I would call him and they would have a test made of the water up and down there, so that we were then feeding back information that Ocean City's waters were clear and clean. That was very important, because you can get panic. Like two syringes almost drove everybody off, so you have to be careful on just exactly what we are doing. So what Marty was saying, this is offshore, way offshore dumping that is causing the problem, and not right long the line of the Ocean City beaches which are so important to us.

Mr. McMILLEN. I appreciate your comment on that.

The other point I would like to ask is, right now the State of Maryland has 115 incinerators. Obviously one thing that you have to do in terms of your executive order is to incinerate a great deal of this infectious waste in-State. Do we have the capacity in-State to handle the demands of the waste and the demands of the executive order?

Governor SCHAEFER. Well, let me answer it from my standpoint: Yes, we have the capacity. We have a hazardous waste landfill that can be used. We have the incinerators. It is like everything else, though, Congressman. Wherever you try to put an incinerator or you try to put a landfill, you always have utter panic, but I think we have the capacity to be able to do it. It's a matter of cost. In many of these areas they are worried about the cost of proper disposal. Now that's my understanding.

Marty?

Mr. WALSH. Just to add one other comment to that, one of the reasons that we think we are in a prevent mode rather than in sort of an epidemic mode that may be the case elsewhere, is that we in fact do have about 115 medical incinerators around the State. Certainly it's an emotional subject even to have an incinerator, but we do have a system that is in place that can neutralize medical waste, including the infectious waste, and by doing it properly, in effect at the end of that process we can simply land-apply that and any of the medical aspects of this would be neutralized by that incineration system.

We are concerned that there is a great deal of movement out of other States, most of it simply traveling through our State, but one of the concerns is that other States may not be putting the number of incinerators or the type of incinerators to neutralize materials, and that we become a potential dumping site. We think we are not in that position right now. We think there are other places, even before our regulations, that were better choices for other States to send their material, but ideally we would have all of us taking care of our own.

Mr. MCMILLEN. Mr. Chairman?

Mr. SCHEUER. Well, I want to thank the Governor and his two aides for your fine testimony. You say this stuff comes in from out there in the ocean. Of course in New York, our Atlantic beaches in New York and New Jersey have been plagued by this stuff. We do at the present time legally dump at the 106-mile point.

Our subcommittee has been after EPA and NOAA—the National Oceanic and Atmospheric Administration—for a number of years to do cross-media, multidisciplinary studies as to which is the least environmentally degrading form of getting rid of these solid wastes, the human waste and other waste. It's a very difficult, it's an agonizingly difficult problem. Is it through ocean dumping? Is it through incineration on land? Is it spreading it out on the land?

We have three choices: the air, through incineration; the land, through landfills and land spreading out; and the ocean. None of them are very attractive, but we pile this stuff up at an horrendous rate, and the question is, what is the least harmful, what is the least environmentally degrading way of getting rid of this stuff?

We have seen the absolutely bizarre example of a whole barge load of this stuff seemingly going on an endless voyage around the globe, circling the globe—it could be an allegorical novel or a play—looking for a place to dump. So we are hopeful that one of these days EPA and NOAA will take on this challenge of giving us the hard facts that we need in order to make these very perplexing, very difficult, agonizing decisions on how to get rid of the detritus of an urban civilization. It's tough. It's awfully tough, and this hearing is symptomatic and symbolic of that.

I very much appreciate your testimony, Governor. You have been very kind and very generous and very thoughtful. We appreciate your giving us of your wisdom and that of your aides, and we are very grateful to you.

Mr. McMillen. Mr. Hefley?

Mr. Hefley. Thank you, Mr. Chairman.

Governor, I too would thank you for being here today. It is very helpful, and I would commend you on the fact that your State has addressed these problems. Have there been any prosecutions to this point?

Governor Schaefer. I can't answer that. I don't really know. Do you know, Marty?

Mr. Walsh. No. Our regulations have just gone in to effect on the 28th of September. By virtue of the speed that this has come off the line, we are working with the haulers, with the hospital associations, with the biotech industry, as the Governor mentioned, so that we are giving them a grace period until the 24th of September—the 24th of October—and at that point we will bring the full thrust of our enforcement system to bear.

Mr. Hefley. I see.

Mr. Walsh. It does not mean we are not going to enforce now. We will just use a little more judgment and a little more calmness, perhaps.

Mr. Hefley. Well, even before these tough regulations go into effect, Baltimore Harbor does not seem to have the reputation of a Boston Harbor or a Tacoma. Is that a true perception? Is Baltimore Harbor reasonably clean?

Governor Schaefer. I would think Baltimore Harbor is relatively clean. You have some very responsible hospitals in the area, Johns Hopkins, for example, is very responsible. I think the other hospitals were in disposal of medical wastes for some time and just didn't go out and dump. Now the problem is starting to escalate a little bit.

Let me tell you, you mentioned prosecution. The strict regulations that we put in were thought out by our Department of Environment to do that, and I think now that everyone knows we are very serious about it, and getting the camera on it.

And the biotech firms who are saying we are getting too tough and making it impossible for them to do business, I just started off by saying I don't think so. I think we can help them, and I think we will, but come the 24th, when we trace back and we find a violator, it is our intention to prosecute them and to prosecute them until people understand that we really mean it, and I think that we will help our environment with the law. It can be done. It can be done.

Now the one, the shooter on the street who takes the vial and throws it into the sewer, that's the one where it washes down into the Inner Harbor, into the Baltimore Harbor. That's tough, but the major people I think will comply.

Mr. Hefley. Beyond just medical waste, how clean is the Chesapeake? It seems to me it had a reputation at one time for not being very clean, and it seems that that reputation has changed.

Governor Schaefer. You know, I testified not too long ago—incidentally, to give testimony before congressional committees is really a pleasure. They treat you with—I'll use the term—they treat you with respect. They let you give them the information.

You would probably be embarrassed to death if I tried to put you on the spot, but I am most grateful, and I wanted to just tell Tom that I appreciate this.

But people ask me that question. They say, "We are spending billions of dollars on this. Do you see any progress?" You have to remember we have spent 50 years messing up the Bay—the watermen and the recreational people, the governments, everyone. We were just dumping the sewage, we were dumping phosphorus, nutrients, everything into the Bay. All of a sudden we would wake up one day and we found we've got a problem. It's reversing that, and I would say now we are in the process of having slowed down, and now we are starting to see progress.

When I say "see progress," it will be four or five or six or seven years before the progress that I would like to see is finished. We are making boaters aware of the problem, we are making individuals aware of the problem, making the watermen aware of it, because they are having a very difficult time with disease. It's due to something else, that MSX disease. They overfished the rockfish, but yes, I see progress.

The land use that Maryland put in—and I was not here, Governor Hughes put that in, that 1,000 feet of shoreline, critical areas—that was a major step, a major step on the runoff. We are making the farmers very aware of the problem of agriculture, and I see great progress with them, so I am encouraged. I really am encouraged with the cleanup of the Bay.

We have been helped by the Federal Government. I think we get $10 to $15 million from the Federal Government, which is a great help to us. We hope that will continue, but I see progress.

Mr. Hefley. Do your rules and regulations also include the streams that feed the Bay, the Severn and the South and so forth, and are they being cleaned up also?

Governor Schaefer. Yes. You know, it's hard to tell a person in western Maryland, 150 miles away from the Bay, that "You are polluting the Bay." Ninety-three percent of the land mass runs off into the streams, and from the streams into the rivers, and the rivers into the Bay. We are making people all over the State aware that everyone, everyone, helps to pollute the Bay, and it's a hard sell to tell them that "You are polluting the Bay." We are getting that message in western Maryland and in central Maryland, and in the Baltimore area and in Cecil and all the counties around, but we are getting that message over. We see neighborhoods are helping to clean up the streams. There are "Save Our Streams" organizations that are starting, and I am encouraged with them.

Mr. Hefley. Thank you, Governor. I am impressed with the program you seem to have going, and I will be anxious to watch and see how it develops and how effective it is as it goes down the line. Thank you very much.

Governor Schaefer. One of the important things is not to just keep on asking for money. One of the things is also, we have to ask for money for treatment plants and things like that, but there is a lot that the States and the citizens can do themselves, and that is what we are trying to emphasize: Make every Marylander aware that they can help clean up the Bay.

Mr. **SCHEUER**. Governor, I just want to put a footnote on what you are telling us, that people 150 miles away from the Bay don't understand that they are part of the problem, and of course we are all part of the problem, the fact that we have this enormous urban agglomeration, far more than nature ever wanted. It is overwhelming nature's ability to cope. It is overwhelming nature's infrastructure.

A New York State Environment Commissioner, Tom Jurling, made what I consider an interesting quote. He was asked, "Where is the beach garbage coming from?" He said, "Where is it coming from? You have 21 million people living in this area." That's the New York standard metropolitan statistical area, the SMSA. "You've got 21 million people living in this area. That's where it's coming from. It's coming from you and me."

Of course that is no more true in New York than it is in this neighborhood, and I guess the challenge to leaders like you is to get people to understand that we are all in this together and that everything is related to everything else. It's not just a question of one little boy peeing in a stream someplace, you know. Nature can cope with that, but when you talk about these vast urban agglomerations sort of overwhelming really a fragile natural infrastructure, then each of us has a whole new level of responsibility to conduct ourselves in a way that is environmentally acceptable.

You have done a remarkable job in providing this kind of leadership, and so has Congressman McMillen. It makes me feel good to hear a State Governor like you express himself in such a thoughtful, responsible way.

Governor **SCHAEFER**. Thank you very much.

Mr. **MCMILLEN**. Thank you all for coming. Mr. Governor, I just want to say I congratulate you on your leadership. If we had 50 Governors in the Federal Government doing the same type—

Governor **SCHAEFER**. Tom, I am for you always.

[Laughter.]

Mr. **MCMILLEN**. We will move to our next panel. We have three witnesses in our next panel. One of the witnesses is Dr. Andrew Robertson, the chief of the Oceans Assessment Division of the National Oceanic and Atmospheric Administration; Devereaux Barnes, director of the Characterization and Assessment Division in the Office of Solid Waste and Emergency Response of the EPA; and Charles Spooner, director of the Chesapeake Bay Program of the Environmental Protection Agency.

All of your statements will be printed in the record. It would be helpful for us, since we are on a time leash because we are going into session at noon today, if you could possibly summarize your statements. We will start with Mr. Barnes. Why don't each of you give a summary of your testimony in 5 minutes, and then we will move forward with questions if that is possible. Thank you very much.

STATEMENT OF MR. DEVEREAUX BARNES, DIRECTOR, CHARACTERIZATION AND ASSESSMENT DIVISION, OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY: MR. CHARDES SPOONER, DIRECTOR, CHESAPEAKE BAY PROGRAM

Mr. Barnes. Thank you very much, and good morning. I would like to first summarize briefly EPA's initiatives that we have with respect to medical waste, and then briefly describe what the agency is doing with respect to ensuring the health and safety of our oceans and estuaries.I21As all of you are painfully aware, I am sure, the recent incidents including the washup of medical waste in the Patapsco and the beach closings elsewhere, in other States, have focused national attention on medical waste. Improper management of medical waste is a serious problem, but it is part of a much larger solid waste problem. As a Nation we generate more and more garbage, and this is aggravated by the use of plastics and disposables not only by consumers but the medical profession alike.

In addition, explosive growth and development along our Nation's coastlines have created a near crisis in the availability and cost of solid waste and medical waste disposal, as well as overtaxing our coastal and near-shore systems. At the present time it is estimated that nearly 70 percent of our population now lives within 60 miles of the coastline.

The recent washups of medical waste come from a variety of sources: illegal disposal, combined sewer overflows, beach litter, illegal drug use, and inadequate handling of municipal solid waste. As I am sure all of you know, there are lots of different kinds of medical waste, including such things as wrappers, containers such as IV bags, and potentially infectious waste such as blood, tissue, sharps, cultures, and stocks of infectious agents. Medical waste is also generated by a variety of sources, not only hospitals but also doctors' offices, dentists, funeral homes, veterinarians, and home health care.

Traditionally and historically, EPA has viewed its role in this area as one of providing education and guidance. In 1986 we issued a guidance document for the management of infectious waste. In November of last year we convened a panel of experts to reconsider the issue of medical waste disposal as the threat of medical waste incidents in disposal was arising, and earlier this year we issued a Federal Register notice in which we asked for a number of comments— or comments on a number of issues, rather—on key questions related to medical waste disposal.

In light of the incidents this summer, it is clear that more needs to be done. To do this, the administrator set up a task force which is chaired by the deputy administrator. The goal of the task force is to make decisions by February of this coming year as to what additional things, both at the Federal level and the State level, need to be done.

To do this, the task force will be characterizing medical waste including, among other things, coming up with a definition, a uniform definition of solid waste and infectious waste, and also estimates as to the national quantities of infectious waste that are generated and disposed of in this country. The task force will also be assessing health, environmental, and economic aspects of the problem, evaluating current existing Federal and State regulations, and identifying options for tracking and management of infectious waste.

The EPA is also conducting an ongoing assistance program, developing brochures and posters describing the dangers of medical waste, improper handling and disposal practices. In addition to these activities, the EPA is also helping to coordinate activities with existing States.

There is a pilot project that is currently ongoing in New York/New Jersey, where EPA has helped to facilitate a coordinated emergency—development of emergency regulations similar to that which has been done in Maryland. We recently expanded this effort to include eight mid-Atlantic States, including Maryland, in which all those States got together to discuss what currently was ongoing with respect to medical waste disposal.

This week EPA is also cosponsoring, with the State Attorneys General's Office, a meeting on enforcement activities for 14 East Coast States, focused on proper enforcement mechanisms and disposal systems for medical waste.

Proper management of medical waste is an important issue and will continue to be among the agency's highest priorities. The agency is fully committed to vigorous enforcement of all existing regulatory and statutory authorities, as well as pursuing the initiatives that I have discussed briefly here this morning. We look forward to working with the Congress and the States in developing a solution to this very serious problem.

I would like to turn now just briefly to EPA's activities to ensure the health and safety of our oceans and estuaries. The public concern and attention to coastal and marine pollution have reached new highs this summer, not only with respect to beach closings for medical waste washups but also over ocean dumping of sewage sludge, bacterial contamination of shellfish beds, and the accumulation of toxic compounds and sediments.

In attempting to assess the overall environmental health of the oceans, it is immediately clear that the most serious pollution impacts are in coastal and near-shore areas. The Chesapeake Bay is an example of this. We now realize that pollutants in coastal areas come in many forms, such as excess nutrients, bacterial and viral contamination, toxic organic compounds, and heavy metals, and are introduced by a variety of different sources.

In recognition of the serious nature of the threat to marine ecosystems, the administrator is currently developing a marine policy and action plan to guide the agency's efforts to protect and restore the quality of the Nation's estuaries. This policy will be predicated upon a recognition that the Chesapeake Bay and other water bodies will not achieve clean water goals with traditional pollution control methods alone.

With respect to floating materials and plastics in the ocean, EPA has also formed an internal work group as well as the interagency task force, to assist in the preparation of a series of reports on the effects of plastics in the environment as required by the Marine Plastics Ocean Research and Control Act of 1987.

This briefly concludes my remarks, Mr. Chairman. I would be, myself and Mr. Spooner would be happy to answer any questions that you might have.

[The prepared statement of Mr. Barnes follows:]

STATEMENT OF
DEVEREAUX BARNES
DIRECTOR, CHARACTERIZATION AND ASSESSMENT DIVISION
OFFICE OF SOLID WASTE
AND
CHARLES SPOONER
DIRECTOR, CHESAPEAKE BAY PROGRAM
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON NATURAL RESOURCES,
AGRICULTURE RESEARCH AND ENVIRONMENT
OF THE
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES
Annapolis, Maryland

October 3, 1988

Mr. Chairman and members of the Subcommittee, I am Devereaux Barnes, Director of the Characterization and Assessment Division, Office of Solid Waste. With me today is Charles Spooner, Director of the U.S. Environmental Protection Agency's Chesapeake Bay Program. We appreciate the opportunity to be here today to discuss the problems of ocean pollution problems in general, and of medical waste pollution in particular. First I will discuss the Agency's current initiatives for better management of medical waste and describe the methods prescribed by EPA for medical waste management. Then I will briefly outline for you EPA's efforts to assure the health and safety of our oceans and estuaries.

THE MEDICAL WASTE PROBLEM

I would now like to turn my attention to that aspect of coastal pollution which you have specifically requested that I address. Recent incidents, including the washup in August of medical wastes in the Patapsco River near the Francis Scott Key Bridge, and beach closings in other States have focused attention on the nation's waste management problems. From the age and condition of the needles and syringes collected near the bridge and the other wastes found there, it appears that these needles may, in fact, have been part of the municipal waste stream. We share your concern about the proper management of municipal solid waste and in particular medical waste. Municipal solid waste management has emerged rapidly as a major national issue. We, as a nation, produce more and more garbage; about 160 million tons per year. It is estimated that hospitals generate 3.2 million tons of medical waste per year. EPA estimates that 10 to 15 percent of hospital waste is potentially infectious.

The current washing up of floatables could be due to a number of sources: some alleged instances of illegal disposal; combined sewer overflow; stormwater runoff; beach litter; illegal drug users; and the generally inadequate handling of solid wastes at landfills and coastal transfer facilities, which include wastes from even legitimate home users of syringes, such as diabetics, doctor's offices, and laboratories. The problems illustrate how despite major efforts to clean up our waters--billions for Sewage Treatment Plant construction, major control of industrial discharges, and the phasing down of permitted ocean dumping--it is still not enough in the face of the explosive development and growth along our nation's coastlines.

Today, it is estimated that seventy percent of our population now lives within 60 miles of a coastline. The solid waste situation is aggravated by increased use of plastic disposables by all consumers including the medical profession, and a near crisis in availability and cost of solid and medical waste disposal options. The solution requires effort by all levels of government and by individual citizens who must become more aware of their own solid waste generation and disposal practices. We need to ensure that all wastes are properly managed to protect human health and the integrity of the environment.

I will limit my remarks today to medical wastes and more specifically to the portion of medical wastes which may be infectious.

RISK ASSOCIATED WITH INFECTIOUS WASTE

Medical wastes include a variety of wastes such as packaging (wrappers from bandages and catheters), containers (IV bags, empty vials), disposable items (tongue depressors, thermometer covers), and potentially infectious wastes (blood, tissue, sharps, cultures, and stocks of infectious agents). While hospitals, clinics and health care facilities may generate the vast majority of these wastes, medical wastes including those that may be infectious are also generated by private practices, home health care, veterinary clinics, and blood banks. Thus, this problem and our concern for the proper treatment and disposal of infectious waste is not easily resolved as there are numerous generators, many of which produce only small quantities.

The "EPA Guide for Infectious Waste Management" published in May, 1986, outlined the EPA perspective on environmentally acceptable techniques for managing infectious wastes. Topics covered include a working definition of infectious waste, the various categories of waste included under the definition, and recommended practices for packaging, transportation, treatment, storage, and disposal of these wastes. The document provides guidance to persons responsible for infectious waste management. State and local regulatory agencies have found and continue to find this manual useful resource material. According to a survey by the Council of State Governments, 44 States have medical waste management programs in place or under development.

In November, 1987, as a result of several incidents of improper management and disposal of medical wastes and growing public concern about the potential threat of medical waste, the Agency called together a panel of experts to discuss the definition and proper management of, and risks posed by infectious wastes. The meeting was held to evaluate EPA's past role in medical waste management and to assist EPA in determining whether the Agency should undertake any additional action under the Resource Conservation and Recovery Act. The proceedings of this meeting have been made available to the public. The consensus of the panel was that the risks posed by medical wastes were primarily occupational, that incidents of public exposure to medical wastes were isolated, that EPA should deal with the situation through guidance and public education, and that EPA should issue regulations only if guidance and education failed to correct the problems associated with medical waste management.

EPA'S MEDICAL WASTE TASK FORCE

It is clear that much more will be required to ensure that this problem is resolved. It is for this reason that the Agency has a number of efforts under way. To ensure coordination within the Agency, the Administrator established a Medical Waste Task Force, chaired by the Deputy Administrator, Dr. John A. Moore, and involving all pertinent headquarters and regional offices. The purpose of the medical waste task force is to: coordinate EPA activities; to develop an action plan; to work with States, medical and environmental groups, and Congress; and to communicate with the public. The goal of the Task Force is that, by February, 1989, EPA will make decisions and recommendations about additional State or federal actions needed to manage medical wastes. In attempting to attain its goal, the Task Force will perform the following functions:

Characterize Medical Waste. Ensuring a consistent, uniform definition for medical waste must be a part of the foundation of any national program that will ensure its proper management.

Most recently, in a further effort to share available information on medical wastes and their management and to obtain the views of all interested parties, we published a Federal Register notice on June 2, 1988, seeking comment on a number of issues related to medical wastes. These include: (1) an appropriate definition for infectious waste, (2) an identification of the full range of problems and risks posed by medical waste, (3) the appropriate role for EPA in managing medical waste, (4) the appropriateness of requiring tracking systems for medical wastes, and (5) whether certain medical waste generators should be exempt if regulations were issued. EPA has requested input on a defining six types of waste as potentially infectious. These include: (1) cultures and stocks of medical agents and associated biologicals; (2) pathological wastes; (3) human blood and blood products; (4) contaminated sharps; (5) contaminated animal carcasses, body parts and bedding; and (6) isolation waste (as defined by CDC). The comment period for the Federal Register notice closed on August 1. We are evaluating the Federal Register comments regarding alternative definitions of infectious waste, and are preparing a complete summary of all comments received. We hope to conclude an options paper on this issue this fall. After full comments, we intend to propose a definition to be published in the Federal Register by mid-December, which will then be the basis for EPA's medical waste management program.

Assess the Effects. The Agency needs to determine the environmental, economic, and health risks of improper disposal of medical wastes. Activities associated with this task will include identifying major potential impacts of medical wastes and categorizing them by environmental, economic and health effects. The Agency will identify health effects data gaps through research and development and scientific studies. We also plan to perform a comprehensive study of sources, probabilities of release, environmental transport, and significant impacts nationwide.

As a part of an on-going effort to better define the dimension of the medical waste management problem nationwide, we have a data collection effort under way. Our objective is to assess the extent of the problem by determining the amount and types of medical waste that are generated, with the relative contribution of each source (doctors' offices, clinics, hospitals, etc.), as well as how the waste is being transported, treated, and disposed, whether on site or off site. We expect to conclude this work by mid-December.

Evaluate State and Federal Programs. We are assessing State programs to better define the effectiveness of existing controls as well as the identification of those components of State programs, such as tracking systems, which have and have not been successful. We are providing technical assistance to a pilot program conducted by New York State and New Jersey.

Eight East coast States, including Maryland, were represented at a September 15 meeting to discuss this program. We are also working with States to enhance enforcement of ocean pollution programs. On October 3rd and 4th, we will participate in the East Coast Ocean Pollution Conference in Rhode Island, where federal and State ocean pollution program officials and State attorneys general will exchange information on enforcement activities.

We are also continuing to analyze the comments from the public on our Federal Register Notice of June 2 relating to medical waste management, including the need for a tracking system. We intend to conclude the evaluation of State and municipal progress by November 15. The Office of Air and Radiation is also working on a report which is designed to compile data on hospital wastes. This report will include a characterization of hospital waste, an examination of available control technology including combustion equipment, data from emissions tests, and air emissions factors. This report, which is scheduled to be completed in mid-December, will help us to make a determination as to whether new regulations are required for medical waste incinerators. By February 15, we hope to have preliminary determinations made and work under way for a program to assure proper tracking of medical waste.

As I have mentioned, the Agency plans to evaluate tracking systems currently being used by the States and others to determine the most effective means of tracking medical waste. The Agency will also evaluate the effectiveness of a pilot tracking system.

As part of this activity, the Agency plans to develop a national data base to establish on-going capability to evaluate compliance, waste generation amounts, transportation and management practices and compliance costs.

We are concluding an analysis of our existing authorities under federal law for assuring proper enforcement and management of medical wastes. It appears that the Resource Conservation and Recovery Act, the Toxic Substances Control Act, and the Clean Air Act may offer a number of possibilities for improving regulatory controls on medical wastes, if it is determined that current and expected education and guidance to the States is inadequate.

Conduct Management Options Analysis. EPA plans to identify options for managing and tracking medical wastes. Once options are identified, we will conduct a progression of analyses to narrow the set of options to those alternatives which would provide the most appropriate approach. At that time, a determination could be made to address the extent to which current and expected State, local, and federal programs would need to be updated.

Provide Education, Information Exchange, and Public Outreach. The Agency must ensure that the general public and interest groups are provided with the information necessary to understand the nature of this problem and are kept fully informed of all program developments, including program implementation requirements. EPA plans to develop public outreach materials to address public concerns and information needs and to demonstrate EPA's commitment to the program. Target audiences are expected to include the general public, health care institutions and providers, trade associations, waste management firms, and environmental interest groups.

We all agree that good management of medical waste is important, and we will continue to count proper medical waste management among our highest priorities. We all share the same concerns that solid waste, including medical waste, must be managed properly and that our near coastal waters and beaches must not be dumping grounds. The Agency is fully committed to using Section 7003 and other appropriate authorities to the fullest extent possible under RCRA or other environmental statutes when illegal disposal or dumping activities occur. We look forward to working with all concerned to effect responsible solid waste management practices.

OCEAN ENVIRONMENTAL ASSESSMENT

Public concern and attention to the incidence of coastal and marine pollution have reached new highs following media coverage this summer of beach closings from wash-up of hospital wastes, the continuing debate over ocean dumping of sewage sludge, bacterial contamination of shellfish beds and the accumulation of toxic compounds in sediments. Representatives of EPA have participated in recent hearings held by both Senate and House Subcommittees, focusing on the economic and ecological value of our coastal and ocean resources. We share your concern about contamination of marine waters, and are committed to stringent regulation of ocean dumping and discharges, coupled with targeted marine research and monitoring efforts.

In attempting to assess the overall environmental health of the oceans, it is immediately clear that the most serious pollution impacts are in coastal and near-shore areas where the majority of pollutants are introduced and are at the highest concentrations. The Chesapeake Bay is an example of this situation. Since estuaries and other near coastal waters are the link between the land and the oceans, preventing ocean pollution means addressing coastal pollution. The Chesapeake Bay Program, initiated in 1983, is an example of how cooperation between States, other federal agencies, and EPA can greatly improve this problem. We now realize that pollutants to coastal waters take many forms--such as excess nutrients, bacterial and viral contamination, toxic organic chemicals and metals--and are introduced through many different pathways (e.g., Combined Sewer Overflows, airborne transport, urban stormwater and agricultural runoff, and point source discharges). As the Office of Technology Assessment stated in its 1987 report on waste disposal in marine environments, further degradation of coastal waters can be expected unless we commit ourselves to a new level of management and action.

Various statistics are available which indicate reasons for concern about ocean pollution. For example, over one-third of the shellfish beds in U.S. waters are closed due to pollution, monitoring programs are turning up higher incidences of tumors in bottom-dwelling fish in contact with contaminated sediments, and bioaccumulation of toxics in some species of fish has led to the issuance of fish consumption advisories in several parts of the country. Well-designed research and monitoring programs will continue to be an important source of information on the status of ocean and coastal environments. However, rather than emphasizing the environmental concerns that we all share, I would like to turn to a discussion of how EPA is addressing these problems.

OCEAN RESEARCH AND MONITORING

EPA's ongoing ocean research and monitoring activities are geared toward specific management and regulatory responsibilities, including ocean disposal of sewage sludge and dredged material and ocean outfalls from municipal and industrial sources to coastal waters, seeking to provide the scientific basis for regulating ocean disposal site designation and site management. Under the Marine Protection, Research and Sanctuaries Act (MPRSA), EPA is authorized to regulate sites for ocean disposal of dredged material (in cooperation with the U.S. Army Corps of Engineers), sewage sludge, and chemical wastes. EPA also conducts monitoring and research on appropriate site-specific effluent limitations for discharges to ocean waters under the Clean Water Act Sections 301(h) and 403(c).

With respect to floating marine debris, EPA has formed an internal workgroup, in addition to an interagency task force, to assist in the preparation of a series of reports on the effects of plastic materials on the marine environment, as required by the Marine Plastic Pollution Research and Control Act of 1987. In addition, the Agency has initiated a number of other activities relating to floatables. For example, we have recently completed a monitoring study in Region II on the extent and impacts of floatables in the New York Bight, focusing on floatables from combined sewer overflows (CSOs) and landfills. The results of this study are included in a report to Congress which will be released shortly. I would also like to note that EPA is helping to fund a nationwide beach cleanup effort coordinated by the Center for Environmental Education as part of the COASTWEEKS'88 celebration this fall.

In addition to marine pollution research conducted at regional laboratories , EPA operates the ANDERSON, an ocean survey vessel based here in Annapolis which is equipped and staffed to conduct offshore scientific data collection. In FY87 and FY88, the ANDERSON conducted surveys at dredged material disposal sites in the Gulf of Mexico and off the coast of Virginia and the Carolinas, monitoring of floatables, and sediment and water column sampling as part of the New York Bight Restoration study, and water quality studies in the Chesapeake Bay and other near-coastal waters.

Dredged material disposal. EPA's Office of Marine and Estuarine Protection is currently developing guidance for the Regions to use in designing site monitoring and management programs for dredged material disposal sites. The purpose of such monitoring is to assure that permit conditions are being adhered to, and to evaluate the adequacy of the existing permit conditions for containing impacts at the site. The guidance will emphasize a tiered monitoring approach with explicit monitoring objectives and testable hypotheses to determine regulatory compliance, effects within and near the site, and on the larger scale, effects on marine resources and ocean processes.

In conjunction with our efforts to develop comprehensive revisions to the ocean dumping regulations, EPA is working closely with the Corps of Engineers to revise the testing protocols which are used to evaluate the suitability of dredged and other materials for ocean dumping.

Sewage Sludge Dumping. EPA, in cooperation with NOAA, has developed a monitoring program for the Deepwater Municipal Sludge Dump Site (or 106-mile site). EPA Region II is responsible for site management and monitoring to assure that dumping activities at the site continue to meet the site designation criteria. Data obtained from this monitoring program, along with baseline survey data obtained prior to opening of the site, is being used to validate a three-dimensional model of pollutant transport and to evaluate current ecological risk assessment techniques for offshore disposal of sewage sludge.

Other ongoing work is directed at refining the models used for human health risk assessment of sludge disposal at the 106-mile site. Future assessments will incorporate a food chain model which relates pollutant concentrations in the water to potential concentrations in marine organisms.

This concludes my prepared statement, Mr. Chairman. We would be happy to answer any questions you may have.

Mr. McMillen. Thank you. We appreciate your testimony. Why don't we go ahead with Mr. Robertson and hear his testimony, as well?

STATEMENT OF MR. ANDREW ROBERTSON, CHIEF, OCEAN ASSESSMENTS DIVISION, NATIONAL OCEAN SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Mr. Robertson. Yes. I am Andrew Robertson, chief of the Ocean Assessments Branch in the National Ocean Service of NOAA, and I am pleased to be here today to report on the general state of environmental quality throughout our Nation's coastal oceans and to provide a statement for the record on this and on H.R. 4210, to reauthorize Title 2 of the Marine Protection, Research and Sanctuaries Act, and H.R. 4211, to reauthorize the National Ocean Pollution Planning Act.

In the interest of time, I will direct my presentation this morning to a summary of some of the results of NOAA's marine pollution research and monitoring work, an area with which I am closely familiar. However, I would be pleased to provide answers to questions concerning any aspects of our program.

Within the U.S. Department of Commerce, NOAA has actively been conducting research and monitoring activities to measure and understand problems of environmental quality in the coastal oceans since the early 1970s. While initially many of these activities were focused on specific problems, such as ocean dumping in the New York Bight or toxic contamination of fish in Puget Sound, over the past 5 years we have moved increasingly towards a national approach to identify and understand these problems.

Almost a year and a half ago, the Office of Technology Assessment summarized the growing body of scientific evidence that many estuarine and coastal areas throughout the United States are showing increasing signs of stress. The preponderance of the scientific evidence used by OTA to arrive at this conclusion was developed by NOAA through the use of funds available under Title 2 of the MPRSA and NOPPA.

During recent months, intense media attention on medical waste on beaches on the East Coast and other problems has heightened further the public's perception of the deteriorating quality of our coastal waters. While as a Nation we have obtained significant reductions in the discharge of the conventional pollutants from major point sources, population growth and related coastal development continue to place a disproportionate strain on coastal and estuarine areas.

Simply put, most Americans prefer to live, work, and play in coastal areas. Today more than 50 percent of our population lives on only 10 percent of the land—that 10 percent occupied by our coastal counties.

As a Nation, we have a significant investment in the maintenance and restoration of environmental quality in these areas. Each year we spend billions of dollars installing and operating pollution control technologies in coastal areas. We spend many more billions of dollars in public funds at all levels of government to provide facilities and access to marine recreational activities.

More than 70 percent of the commercially important species of fish and shellfish depend on coastal and estuarine areas as habitat. Each year commercial and recreational catches of estuarine-dependent fish and shellfish contribute over $13 billion to the U.S. economy. The economies of virtually all coastal communities and regions rely heavily on a continued high level of environmental quality of coastal waters.

This fact has been made even clearer along the East Coast this summer by the effects on local economies from beach closures. When beaches are closed because of pollution, fish and shellfish are perceived by the public to be unsafe to eat, recreational sport fishing declines, motel occupancy rates drop, and the high cost of deteriorating environmental quality in coastal oceans affects us all.

Let me go on very briefly, then, and talk about some of the high points of our program. The first one, I will give a short discussion of our work on toxic contamination of the environment.

Over the past 5 years our National Status and Trends Program has been monitoring systematically estuarine and coastal sites to determine the concentrations of toxic pollutants in mussels, oysters, bottom-feeding fish, and sediments. Since 1984 we have been measuring the concentrations of synthetic organic compounds and toxic metals in fish and sediments at about 50 sites through the NOAA Benthic Surveillance Project. Since 1986 we have measured the concentrations of these same pollutants in mussels, oysters, and associated sediments at an additional 150 sites through the NOAA Mussel Watch Project.

The pollutants that are monitored by the National Status and Trends Program include DDT and its metabolites; nine other chlorinated pesticides, including aldrin, dieldrin, and mirex; polychlorinated biphenyls—PCBs; 18 polyaromatic hydrocarbons; 12 trace elements, and 4 major elements. We took great care to select sampling sites we believed were representative of the general conditions within the areas in which they are located. We did not place sampling sites near point sources of contamination.

From a national perspective, the highest concentrations in bivalves—these are the mussels and oysters—for most pollutants were found in the Hudson/Raritan Estuary, Boston Harbor, Western Long Island Sound, Baltimore Harbor, San Francisco Bay, Delaware Bay, and San Diego Bay. The highest concentration of PCBs in bivalves was found in Buzzard's Bay; for the total pesticides, in Hudson/Raritan Estuary; for PAHs, Elliott Bay; and for lead, Marina Del Ray, near Los Angeles.

The highest concentrations in the livers of fish were found mostly in Southern California sites, in Western Long Island Sound, in San Francisco Bay, and in Elliott Bay, by Seattle.

Contamination in the sediments, the upper 2 centimeters of the sediments, among the most contaminated areas here were Boston Harbor, Hudson/Raritan Estuary, and sites around San Diego, Los Angeles, and Seattle.

While with only a few exceptions, these results are not surprising, they do reveal the truly national extent of the problem of toxic contamination of fish and shellfish throughout the coastal waters of the U.S. As a word of caution, this should not be understood as suggesting that the levels of toxic contamination are such as to pose a significant threat to human health. Our program is not presently designed to evaluate human health threats. It is very difficult, in fact, to interpret our data in terms of human health.

There is good news, however, also. Based on our recent analyses of monitoring data from 13 national sites, decreasing concentration of DDT in fish and shellfish was evident. Also, we found some indication of decreasing contamination due to PCBs, dieldrin, and toxaphene.

A second area of importance in our program is with regard to closure of shellfish growing areas. Approximately one-third of the shellfish growing waters in the U.S. are permanently or temporarily closed to harvest because of possible bacterial contamination. Waters are classified for harvest based on the presence of actual or potential pollutant sources and by contaminant levels of coliform bacteria, under guidelines established by the National Shellfish Sanitation Program, a cooperative Federal/State/industry partnership.

Marine pollution sources affecting shellfish growing waters include sewage treatment plants, septic systems, raw sewage discharges, urban runoff, combined sewer discharges, wild and domestic animals, and boat discharges. Nonpoint sources are estimated to be the primary pollution sources.

Nationwide, regions vary greatly in the proportion of approved waters, reflecting differences in size and physical characteristics of coastal waters as well as the presence of pollution sources. In the Gulf of Mexico, less than half of the waters are approved for harvest. In fact, the major commercial harvest areas in Florida, Alabama, Mississippi, and Texas are all located in waters that are only conditionally approved for harvest.

By contrast, 80 percent of the shellfish growing waters on the East Coast are approved. However, some of these are far from shore in high saline waters that are not naturally productive. Nonproductive offshore waters in Long Island Sound and the middle of Chesapeake Bay, for example, account for one-third of the approved waters on the East Coast. On the West Coast, only 30 percent of the water are approved for harvest.

As a final area, let me briefly touch on nutrient overenrichment of our coastal waters. These nutrients are essential for proper growth of marine organisms. However, when the levels are too high several adverse effects occur, including switching to less desirable species and to depletion of oxygen levels, causing at times fish kills. An increase in nutrient levels in our waters is terms "eutrophication." This condition can occur naturally, or it can be speeded up and occur as a result of human activities, such as runoff from fertilized farmlands, as Governor Schaefer was certainly referring to.

In a 1985 report, NOAA reported on available information on 200 estuaries and embayments and organized the areas into three categories: those with priority hypoxia areas—these are ones where there is no oxygen part of the year; potentially hypoxic areas; and areas where there was not enough data. Coastal areas falling in the priority category, where we could detect hypoxia for part of the year, included the Hudson/Raritan Estuary; the upper Chesapeake Bay; the mid- Atlantic Bight, especially areas along the New

Jersey- Delaware inner shelf; the near-shore shelf area of Maryland; the upper Neuse River in North Carolina; the Pamlico River, the Perdido Bay; Tampa Bay; the canals and tributaries of Biscayne Bay; the Louisiana Inner Continental Shelf; Mobile Bay; Lake Pontchartrain; and southern Puget Sound.

More recently, we have been using our National Estuarine Inventory to estimate the eutrophication potential of 100 of the major estuaries of the U.S. The flushing rate of each estuary was combined with nutrient loading. Based on this analysis, Narragansett Bay, Long Island Sound, the Hudson/Raritan Estuary, Chesapeake Bay, Delaware Bay, Tampa Bay, and Sarasota Bay were all estimated to have high probability of eutrophic conditions.

Thank you, Mr. Chairman. This concludes my remarks. I would be happy to respond to any questions.

[The prepared statement of Mr. Robertson follows:]

STATEMENT OF
ANDREW ROBERTSON
CHIEF, OCEAN ASSESSMENTS DIVISION
NATIONAL OCEAN SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

BEFORE THE

SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE RESEARCH AND ENVIRONMENT
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

OCTOBER 3, 1988

Mr. Chairman and Members of the Subcommittee:

I am Dr. Andrew Robertson, Chief, Ocean Assessments Division, National Ocean Service, National Oceanic and Atmospheric Administration (NOAA). I am pleased to be here today to report on the general state of environmental quality throughout our Nation's coastal ocean and to summarize the Administration's views on H.R. 4210, to reauthorize Title II of the Marine Protection, Research, and Sanctuaries Act (MPRSA) and, H.R. 4211, to reauthorize the National Ocean Pollution Planning Act (NOPPA).

Within the U.S. Department of Commerce, NOAA has actively been conducting research and monitoring activities to measure and understand problems of environmental quality in the coastal ocean since the early 1970's. While initially many of these activities were focussed on specific problems, such as ocean dumping in the New York Bight or toxic contamination of fish in Puget Sound, over the past five years we have moved increasingly toward a national approach to identify and understand these problems.

The State of Environmental Quality in our Coastal Ocean -- A National Problem

Almost a year and a half ago the Office of Technology Assessment (OTA) summarized the growing body of scientific evidence that many estuarine and coastal areas throughout the United States are showing increasing signs of stress. The preponderance of the scientific evidence used by OTA to arrive at this conclusion was developed by NOAA, through the use of funds available under Title II of the MPRSA and NOPPA. During recent months intense media attention on medical wastes on beaches of the east coast, and other problems has heightened further the public's perception of the deteriorating quality of our coastal waters.

While as a Nation we have obtained significant reductions in the discharge of the "conventional" pollutants from major point sources, population growth and related coastal development continue to place a disproportionate strain on coastal and estuarine areas. Simply put, most Americans prefer to live, work, and play in coastal areas. Today more than 50 percent of our population lives on only about 10 percent of the land -- that 10 percent occupied by our coastal counties.

As a Nation, we have a significant investment in the maintenance and restoration of environmental quality in these areas. Each year we spend billions of dollars in installing and operating pollution control technologies in coastal areas. We spend many more billions of dollars in public funds at all levels of government to provide facilities for and access to marine recreation activities. More than 70 percent of the commercially important species of fish and shellfish depend on coastal and estuarine areas as habitat. Each year commercial and recreational catch of estuarine-dependent fish and shellfish contribute over $13 billion to the U.S. economy. The economies of virtually all coastal communities and regions rely heavily on a continued high level of environmental quality of coastal waters. This fact has been made even clearer along the east coast this summer by the effects on local economies from beach closures (and the attendant negative publicity).

When beaches are closed because of pollution, fish and shellfish are perceived by the public to be unsafe to eat, recreational sportfishing declines, motel occupancy rates drop and the high costs of deteriorating environmental quality in the coastal ocean affect us all.

Toxic Contamination of the Environment

For each of the past five years NOAA's National Status and Trends Program has been monitoring systematically estuarine and coastal sites to determine the concentrations of toxic pollutants in mussels, oysters, bottom-feeding fish, and sediments. Since 1984 we have been measuring the concentrations of synthetic organic compounds and toxic metals in fish and sediments at about 50 sites through the NOAA Benthic Surveillance Project. Each year we have made some changes in the sampling locations. Since 1986 we have measured the concentration of these same pollutants in mussels, oysters, and associated sediments at an additional 150 sites through the NOAA Mussel Watch Project. This component of the program has also added a few new sites.

Given the current budget climate, the Administration proposes to reduce the National Status and Trends (NS&T) Program to the minimum level necessary to achieve its objective. The pollutants that are monitored by NS&T include: DDT and its metabolites; nine other chlorinated pesticides, including aldrin, dieldrin, and mirex; polychlorinated biphenyls (PCBs); 18 polyaromatic hydrocarbons (PAHs); 12 trace elements; and four major elements.

We took great care to select sampling sites, we believed were "representative" of the general conditions within the areas in which they are located. We did not place sampling sites near point sources of contamination, such as outfalls from industrial or sewage treatment plants, because these sites are often only "hot spots" and thus are not representative of overall conditions.

From a national perspective the highest concentrations in bivalves (mussels and oysters) for the most pollutants were found in the Hudson/Raritan Estuary, Boston Harbor, Western Long Island Sound, Baltimore Harbor, San Francisco Bay, Delaware Bay, and San Diego Harbor. The highest concentration of total PCBs in bivalves was found in Buzzards Bay; for total pesticides, both DDT and non-DDT, the Hudson/Raritan Estuary; for total PAH, Elliot Bay (near Seattle); for lead, Marina Del Ray (near Los Angeles); and for mercury, Tampa Bay.

The highest concentrations in the livers of eight species of bottom-feeding fish (e.g., flounders, spot, and croakers) for the most pollutants were found at Southern California sites (e.g., Dana Point, San Diego Harbor, Seal Beach, and Santa Monica Bay), Western Long Island Sound, San Francisco Bay, and Elliot Bay. The highest concentration of total PCBs in fish livers was found in San Diego Harbor; for total pesticides, Boston Harbor; for DDTs, San Pedro Canyon; for lead, Casco Bay; and for mercury, San Francisco Bay.

Contamination in from the upper few centimeters of sediments at NS&T sites have also been measured. Among the most contaminated locations were sampling sites in Boston Harbor, the Hudson/Raritan estuary, and sites around San Diego, Los Angeles, and Seattle. For the most part, sites in the Gulf of Mexico and the southeastern United States show lower levels of overall contamination. However, for some pollutants, higher levels were found at sites near the Florida cities of Jacksonville, Tampa, Panama City, and Fort Walton Beach.

While with only a few exceptions these results are not surprising, they do reveal the truly national extent of the problem of toxic contamination of fish and shellfish throughout the coastal waters of the USA. As a word of caution, this should not be understood as suggesting that the levels of toxic contamination are such as to signify a threat to human health. Our program is not presently designed to evaluate human health threats. It is very difficult to interpret the data we obtain in terms of significance to human health. There is some good news, however. Based on recent NOAA analyses of historical monitoring data from 13 national programs, decreasing concentrations of DDT contamination of fish and shellfish are evident nationwide. Decreasing contamination of PCBs, dieldrin, and toxaphene in selected species at specific sites was also evident.

Closures of Shellfish Growing Waters

Another important indicator of the national extent of the coastal ocean pollution problem is the closure of shellfish growing waters. Approximately one-third of shellfish growing waters of the United States are permanently or temporarily closed to harvest because of possible bacterial contamination. Waters are classified for harvest based on the presence of actual or potential pollution sources and coliform bacteria levels in surface waters (14 MPN - most probable number - of fecal coliform bacteria/100 ml or 70 MPN of total coliform bacteria/100 ml), under guidelines established by the National Shellfish Sanitation Program, a cooperative Federal, State, and industry partnership.

Major pollution sources affecting shellfish growing waters include sewage treatment plants, septic systems, raw sewage discharges, urban runoff, combined sewer overflows, wild and domestic animals, and boat discharges. Nonpoint sources are estimated to be the primary pollution source affecting shellfish growing waters.

Coliform bacteria are often carried to estuarine waters by freshwater inflow either from runoff or from rivers.

Nationwide, regions vary greatly in the proportion of approved waters, reflecting differences in size and physical characteristics of coastal waters as well as the presence of pollution sources. In the Gulf of Mexico, less than half of waters are approved for harvest (42 percent or 2.5 million acres), and these are primarily located in coastal Louisiana, in areas generally removed from pollution sources and contaminated freshwater inputs. In fact, all major commercial harvest areas in Florida, Alabama, Mississippi, and Texas are located in waters that are only conditionally approved for harvest. Because freshwater runoff can be a significant of coliform bacteria, highly productive estuarines waters are by necessity closed to shellfish harvest after large rainfall events or when river stages are high. By comparison, 80 percent of shellfish growing waters (6.6 million acres) on the east coast are approved. However, some of these approved waters are far from shore in high salinity waters that are not naturally productive. Nonproductive offshore waters in Long Island Sound and the middle of Chesapeake Bay, for example, account for one third of the approved waters on the east coast. On the west coast, only 30 percent (0.2 million acres) of waters are approved for harvest. As in the Gulf of Mexico, the smaller west coast estuaries are more heavily affected by nonpoint runoff.

Estuaries in which more than half of the shellfish-growing waters are harvest-limited, i.e., either restricted or prohibited, include: Massachusetts Bay (including Boston Harbor); the Hudson/Raritan estuary; Charleston Harbor; Tampa Bay; Apalachicola Bay; Mobile Bay; Galveston Bay; San Francisco Bay; Tillamook Bay, Oregon; and Grays Harbor, Washington.

Nutrient Overenrichment of Coastal Waters

Nutrients are essential for the proper growth of marine and estuarine organisms and for the general productivity of the marine environment. However, when nutrient levels are too high, several adverse effects can occur:

1. increased turbidity or cloudiness of the water column can keep light from reaching submerged vegetation;
2. changes in the distribution, abundance, and diversity of species;
3. subsequent changes in food chain relationships; and
4. depletion of oxygen levels when large numbers of algae die and are decomposed by microorganisms; oxygen depletion, in turn, can cause other changes, including fish kills.

An increase in nutrient levels in a body of water is termed eutrophication. This condition can occur naturally or as a result of human activities, e.g., runoff from fertilized farmlands or discharges from municipal sewage treatment plants.

A 1985 NOAA report examined available information on about 200 estuaries and embayments of the United States and organized the areas into three categories: 1) priority hypoxia areas; 2) potential hypoxia areas; and 3) areas of lack of data with potential dissolved oxygen problems. Coastal areas falling into the priority category include: the Hudson/Raritan estuary; the upper Chesapeake Bay; the Mid-Atlantic Bight, especially areas along the New Jersey-Delaware inner shelf; the near-shore shelf area of Maryland; the lower Chowan and upper Neuse River in North Carolina; the Pamlico River; Perdido Bay; Tampa Bay; the canals and tributaries of Biscayne Bay up to West Palm Beach; the Louisiana inner continental shelf; Mobile Bay; Lake Pontchartrain; and southern Puget Sound.

More recently, NOAA, using its National Estuarine Inventory (NEI) and National Coastal Pollutant Discharge Inventory (NCPDI), has estimated the "eutrophication potential" of about 100 of the major estuaries of the United States. The flushing rate of each estuary was combined with the nutrient loading to each system to determine the eutrophication potential. Based on this analysis, Narragansett Bay, Long Island Sound, the Hudson/Raritan estuary, Chesapeake Bay, Delaware Bay, Tampa Bay and Sarasota Bay, were all estimated to have a high probability of eutrophic conditions.

Reauthorization of Title II of the Marine Protection, Research and Sanctuaries Act

The authorization of appropriations for Title II of the Marine Protection, Research, and Sanctuaries Act expired on September 30, 1987. The Department of Commerce submitted legislation which would authorize appropriations at a level of $4,552,000 for fiscal year 1989, and such sums as necessary for fiscal year 1990, to carry out research on the effects on ocean ecosystems of ocean dumping and other man-induced changes. The Department of Commerce opposes H.R. 4210, because the $12 million authorization level for fiscal year 1989 nearly triples the President's request of $4,552,000.

Reauthorization of the National Ocean Pollution Planning Act

The authorization of appropriations for the National Ocean Pollution Planning Act (NOPPA) also expired on September 30, 1987. NOPPA directs the Secretary to establish a comprehensive five-year plan for ocean pollution research, development, and monitoring to coordinate all Federal activities in these areas, and to update this plan every three year. NOAA is the lead agency under the Act, and is responsible for preparing the plan. The National Ocean Pollution Policy Board, recently established under NOPPA, is required to review on an annual basis all department and agency budget requests and submit a report to OMB and to the Congress concerning these requests. This report is to include an analysis of how the budget requests relate to the priorities and goals of the 5-year plan. The Department of Commerce submitted legislation which would reauthorize the Act at a level of $3,370,000 for fiscal year 1989, and such sums as necessary for fiscal year 1990, to carry out the Department's responsibilities under that Act. The legislation would allow the National Ocean Pollution Policy Board to continue to review and make recommendations on ocean pollution programs but would restore the budgetary oversight role to the President.

The Administration opposes H.R. 4211 because it contains requirement for the Board to submit its report analyzing executive branch agency budget requests to OMB and to the Congress simultaneously, thereby unconstitutionally interfering with the President's control over executive branch deliberations. Also, the authorization level proposed by H.R. 4211 of $3,750,000 exceeds the fiscal year 1989 budget request of $3,370,000.

Thank you, Mr. Chairman. This concludes my prepared statement; I would be happy to respond to any questions you or any other Members may have.

Mr. McMillen. We thank you, all of you, for your comments and testimony. As I said, your testimony will be included in its entirety in the record. Obviously you have again pointed out the dimensions of this problem. We appreciate your thoughts.

I have some questions that I would like to direct to Mr. Barnes and Mr. Spooner regarding the EPA's activities in this area. My concern really is why it has taken so long to see action. Obviously the EPA under the Resource Conservation and Recovery Act had the legal authority to do something. It has been over 10 years since we have really seen solid action, action that you have presented in your testimony. I am just curious why it has taken so long. I would appreciate your comments on that.

Mr. Barnes. Certainly. The EPA proposed to regulate infectious waste back in 1978. Infectiousness is one of the characteristics the agency can look at in determining whether a waste should be regulated as a hazardous waste. Almost uniformly, the comments that we got back on that proposal were that, it was either that infectious waste or medical waste did not present enough of an environmental or a human health problem or that States were already adequately dealing with the issue. Health care professionals were pretty much unanimous that they thought the cost would exceed whatever small benefits. In other words, we got just a lot of comments that said, from the people that really should know, that regulating it as a hazardous waste was not an appropriate thing to do.

Mr. McMillen. Interjecting a question here—

Mr. Barnes. Sure.

Mr. McMillen.—in that period of time, either before you reached that conclusion or until today, have you done any studies to determine the degree in which infectious medical waste can cause harm to human health and the environment, any studies sponsored by your agency?

Mr. Barnes. Well, there have been some studies, Congressman, that they have done over the last several years. The Air Office is doing a study, looking at air emissions from hospital incinerators. EPA, as I had mentioned, reconvened a panel of experts to get a more recent appraisal of what they thought was an appropriate Federal role. That was last November. And EPA has from time to time issued and updated our guidance documents, so there has been some activity.

In the period of time between 1980 and 1985 there was no indication, really, that the existing systems seemed to be breaking down. There were no instances that we really know of during that period of time. It is relatively lately that it is obvious that things need to be, additional things need to be done.

Mr. McMillen. Well, you know, one of the problems here is, we are dealing with insufficient data. All of a sudden this problem is hitting us right in the face, and we are finding that we—the studies that you are alluding to are studies related to incineration and the like but not related directly to medical waste and the problem therein.

On the backgrounder on medical waste that your agency disseminates, there was a comment in there, a quote that says that there have been several studies that have shown hospital waste generally less virulent than typical domestic waste. Can you tell me the reference for that in your study?

Mr. Barnes. I don't have those off the top of my head, Congressman, but I can get you the reference for that. The Center for Disease Control and one other health care expert, I think associated with the University of Virginia, had referenced those studies. Those studies are often cited as examples of why they think it is inappropriate to regulate medical waste as a hazardous waste.

Mr. McMillen. Yes, but basically the bottom line is, your agency has really sponsored no studies in regard to this issue since the Resource Conservation and Recovery Act was passed. Is that correct?

Mr. Barnes. I am not really sure about that.

Mr. McMillen. Another question is related to the biodegradable plastics that I am curious about. Obviously there has been an extensive debate, not only in the State of Maryland but around the country, as to the efficacy of biodegradable plastics. Obviously one of the concerns is, what do they biodegrade to? Will there be harm to the environment then, as well?

I was curious because obviously that may offer a potential solution to some of the medical waste issue, as well. I was wondering if your agency has done any studies at all or has looked at this issue, good or bad, on the biodegradable plastics issue?

Mr. Barnes. I am not aware of any studies either, Congressman. You are asking some compelling questions, I think, and my sense is that this is an area that is just undergoing initial exploration at this point in time. I know the medical community is very interested in this, and they are starting to do some activities that would go in that direction.

Mr. McMillen. I guess my point on all this—and I will defer to my colleague from Colorado—is that we really need advance warning systems in the Government, particularly on these areas. It is not enough. People go to the shore in the summer and see syringes and vials and so forth being washed ashore. That is not enough. That is not the warning system we want, because by then it's too late.

Our oceans are regurgitating what they can't handle, and part of the frustration I know that we face here is that we don't have sufficient data. We don't know what is out there. We don't know what is in the oceans and what is in our bays. Until we know that, we are not going to be able to reach the proper conclusions. I urge your agency to look ahead at some of these issues before they hit us in the face.

Joel?

Mr. Hefley. Thanks, Tom.

What is the level of funding that the administration has supported for Title 2 of the Marine Protection, Research and Sanctuaries Act, compared to the level in H.R. 4210? Didn't you support a lower level of funding?

Mr. Spooner. I would have to get a specific reading on that. The record that I have does not deal with appropriations.

Mr. Hefley. Okay, so you can't comment on whether or not it is a lower level and why that might be?

Mr. Spooner. No, I can't, sir.

Mr. **Hefley**. Okay. Under the National Ocean Pollution Planning Act, NOAA is supposed to prepare a 5-year plan for overall Federal effort. H.R. 4211 would require that plan also be simultaneously submitted to the office of OMB and to Congress. What is the position of the administration on this simultaneous reporting requirement? Would it intrude on the internal budgeting, planning process?

Mr. **Robertson**. If I may answer that, the administration opposes enactment of H.R. 4211 because of its requirement that the National Ocean Pollution Planning Board submit its report concerning the agency's ocean pollution budget request simultaneously to Congress and to the Office of Management and Budget by December 1st of each year. It considers this to be unconstitutional interference with the President's control over Executive Branch deliberations. The Administration submitted legislation to repeal the requirement for the National Ocean Pollution Planning Act—of the National Ocean Pollution Planning Act—which directs the board to report to Congress, because the requirement violates the separation of powers clause of the Constitution.

Mr. **Hefley**. Are there other changes in the language that you would like to see?

Mr. **Robertson**. I don't believe there are any other changes that we propose, no.

Mr. **Hefley**. Okay, and for EPA, how quickly will EPA be able to get the recommendations of its Task Force on Medical Waste into place?

Mr. **Barnes**. We anticipate, as I said in my testimony, we are going to have the recommendations by February. We hope to get them in before next summer.

Mr. **Hefley**. It will be in place and begin operating?

Mr. **Barnes**. There it is dependent to some extent on pending legislation in both Houses of Congress. There is some legislation that I think is going to the House floor tomorrow, that is a targeted plan, a pilot system that allows various States to either enter into this pilot system or be excluded from it. The Senate in the Lautenberg bill has already passed a pilot tracking system which is similar, and in fact in New York and New Jersey, both of those States already have tracking systems which the legislation calls for operational now and in place.

Mr. **Hefley**. Is it correct to say that the administration does support this legislation?

Mr. **Barnes**. I know that the administrator, Lee Thomas, personally supports certainly the Senate-passed version, and I believe he supports, will support the House version, as well.

Mr. **Hefley**. Okay, and one last question, Mr. Chairman, if I may: In the opinion of both of you there, should we stop all ocean dumping? Not just medical waste.

Mr. **Barnes**. I am really not qualified to answer that question, Congressman.

Mr. **Robertson**. In my opinion, and I believe it is also the opinion of my agency, first of all of course ocean dumping is only, the 106 site off New York is really the only appreciable ocean dumping being carried on now. Our position is that, as I think was already brought up, that we should evaluate all the options and pick the one that is most desirable for the benefit of our society. We don't feel that we should rule out ocean dumping, but it should be evaluated equally as to the costs and benefits versus land, air, the other options.

Mr. HEFLEY. Thank you very much.

Mr. MCMILLEN. Thank you.

Mr. Spooner, what guidelines do you know that your agency has provided for States like Maryland that have taken leadership roles in establishing their own medical waste management systems? Do you know what specific guidelines you have offered the Governor and his agencies?

Mr. SPOONER. I believe those guidelines would be the province of Mr. Barnes.

Mr. BARNES. I'm sorry, Congressman. The question was what guidance we have given the States?

Mr. MCMILLEN. Yes, that have taken leadership roles on this issue. What guidelines have you, what assistance have you provided?

Mr. BARNES. The medical waste, infectious waste guidance document that we issued back in 1976, I think the feedback that we have gotten from the States that we have talked to, it seems to me that they have found that a very useful document. They have been using that. In fact, in the most recent Federal Register notice where we asked about a variety of issues related to medical waste, they seemed to be very supportive of that effort and others of the agency.

I might comment that the emergency provisions that the Governor testified about earlier seemed to be, you know, a very interesting and worthwhile program going on.

Mr. MCMILLEN. Dr. Robertson, you know there have been a number of cases of dolphin kills off the Atlantic and other diseased ocean wildlife in the North European area. Do you have any evidence that this is, any of this is due to medical waste pollution?

Mr. ROBERTSON. We have not studied those occurrences specifically, except in a very small extent some of the problems that have been reported in the crustaceans around the 106 site and on the slope off New York. We have not, with our work, found any evidence that they are related even to waste pollution, but we a really haven't studied the — there are, the European ones, as you are probably aware, there have been suggestions that it could be not medical waste but general pollution effects weakening the immune system in the great seals. The problems with the crustaceans off our coast seems to be that there may be a natural occurrence of the problems that they are seeking, so it is questionable whether it has any anthropogenic cause at all.

Mr. MCMILLEN. Do you have any plans for taking a greater look at this, doing some research as to the damage and the problems that are being caused here?

Mr. ROBERTSON. There are no plans except, as I say, some participation with EPA in the work with the crustaceans out by the dumping site. I am not aware of any other problems within the United States waters or economic zone, but if we saw things happening we would certainly be interested in them. We did participate last year, the National Marine Fisheries Service did participate with other agencies in looking at what might be the cause of the death of the porpoises along the East Coast.

Mr. McMillen. Do you have any hard data about effects of medical waste of people and on fish and wildlife?

Mr. Robertson. No, we do not have any appreciable human health expertise in our agency, and I have not really seen any suggestion that the medical waste would be causing any problem with the wildlife themselves, and so we have not particularly gotten involved in that.

Mr. McMillen. I just want to conclude by saying I think that it is clearer than ever that we do not have the sufficient data bank necessary to make some of the conclusions necessary in this area and to move forward on the appropriate legislation. I think Mr. Hefley asked a very, very important question about the ocean dumping issue. You know, how do we know whether to ban ocean dumping if we don't know whether it is causing problems or not? How do we know how serious medical waste is if we don't know what it is causing, the virulence of it? So these are some of the problems that we are wrestling with, and I appreciate your testimony in this regard.

Mr. Chairman is coming back right now. I will defer one more minute to see if he might have a question.

Mr. Scheuer. I do have just one brief question, Mr. Chairman. I would like to ask the EPA and the NOAA reps here a question about the cross-disciplinary and multimedia study of disposal of solid waste that this subcommittee has been asking for for a number of years now. Every year the problems get more serious. New York and New Jersey are at each other's throats over New York dumping at the 106-mile point and there is a national movement to prohibit ocean dumping.

Now none of us like ocean dumping. None of us like incineration, for that matter, and we certainly don't like the idea of spreading the stuff over the land, but it's there and it's growing at an almost exponential rate. What can you tell us about any plans you may have to do this multimedia, cross- disciplinary, longitudinal study that we need to know which of those three methods is the least environmentally degrading method of getting rid of solid waste?

It seems to me that EPA and NOAA have a real moral obligation, whether we pass legislation requiring you to do this or not, a moral obligation to let the country know and let the Members of Congress know, as well as Governors and members of State legislatures, how we proceed. Which is the least environmentally degrading way of coping with solid waste? When are you going to tell us?

Mr. Spooner. Mr. Chairman, before coming to the Chesapeake Bay program I worked in that area at EPA headquarters. It has been a long and difficult job to develop the tools and the judgments necessary to be able to make that kind of judgment. That work is continuing, and I believe that it will bear fruit in proposed regulations early next year under the Clean Water Act, section 405, when regulations will be proposed at that time.

I have not been associated with that process for about 3 years. However, I believe that, watching it as I have from afar, that the opinion of most people is that the spreading of sludges from wastewater treatment plants on the land is probably the most manageable process. I think that we have seen generally a concern raised for the impacts of incineration, and just generally speaking concerns for the manageability of putting wastes into the ocean. In theory, if you put them far enough out and you put them deep enough in, they are diluted without traces, but that does not appear to always be the case in the past.

Mr. SCHEUER. Mr. Spooner, I appreciate your concern. You are really not answering my question. I want to know when we are going to get a professional, thoughtful, scientifically sound, multimedia, cross-disciplinary study of the comparative advantages of solid waste disposal by these three methods. We want some scientific data and scientific analysis to guide us. When are we going to get that from EPA and NOAA?

Mr. SPOONER. Well, I would be pleased to check back with the people who are currently preparing those regulations, to see if that is a part of what they are doing.

Mr. SCHEUER. I wish you would, and I wish you would get back to us in the next week or 10 days. We will hold the record open.

Does Dr. Robertson from NOAA have anything to add?

Mr. ROBERTSON. All I would add, that our conclusion has been for quite a while that that is the only way to really judge whether we should have open dumping or not, is to do a multimedia comparison, and we feel we have most of the information needed for the marine part of this comparison. We do not have the expertise to do the overall study. That would have to be, I think, EPA or another agency to take the lead; because we do not have the terrestrial expertise in our agency at all.

Mr. SCHEUER. Well, have you put the basic data together from the atmospheric part? You are NOAA, the National Atmospheric and Oceanic Administration, or the other way around, National Oceanic and Atmospheric Administration. Incineration presents atmospheric problems. Have you done that slice of the pie?

Mr. ROBERTSON. I am on the wet side of NOAA. I am not aware that we have done the atmospheric part, but I cannot speak definitively to that.

Mr. SCHEUER. Could you find out and let us know?

Mr. ROBERTSON. Surely.

Mr. SCHEUER. Maybe you and your counterpart at EPA, Mr. Barnes or whoever, can give us some indication of when that comparative study is going to be available to us. We urgently need it. Can you do that in the next week or 10 days?

Mr. ROBERTSON. Yes.

Mr. SCHEUER. Give us some idea of when these two agencies are going to get their act together, with or without legislation, to give us the advice and counsel and guidance that we urgently need in making these tough public policy decisions. Is that an unreasonable request?

Mr. ROBERTSON. No, sir.

Mr. SCHEUER. Thank you.

Thank you very much, Mr. Chairman.

Mr. MCMILLEN. Again, thank you all for your testimony and for answering our questions.

Our second panel will be comprised of William Baker, the head of the Chesapeake Bay Foundation, and Ms. Boyce Thorne Miller of The Oceanic Society.

Thank you for joining us this morning. As before, your entire testimony will be included in the record in its entirety. We would appreciate, for time's sake, if you will summarize your testimony in 5 minutes or so, so that we may proceed with questions. Again, thank you. As I said, your full statement will be printed in the record.

I want to welcome a friend, Will Baker, and thank him for joining us today. I want to compliment you on your outstanding leadership on the Bay, and we are very, very grateful that you could join us this morning. Please proceed with your testimony.

STATEMENT OF MR. WILLIAM C. BAKER, PRESIDENT, CHESAPEAKE BAY FOUNDATION

Mr. **Baker**. Thank you very much, Congressman, and thank you, Mr. Chairman, for coming to Annapolis. It is a great honor to be asked to present testimony today.

The Chesapeake Bay Foundation is a nonprofit organization. We are dedicated to the protection and the restoration of the Bay and its resources. We were founded in 1966. We now have over 60,000 members representing every State in the Union and 14 foreign countries.

The summer of 1988 has taken a heavy toll on the environment. Nowhere has the price of this pollution been greater than on the Chesapeake. From medical waste on our shores, to bluefish and rockfish dying in numbers greater than ever before, to the second largest oil spill in the Bay's history, the summer of 1988 has not been pretty.

Although the potential for water quality degradation from improperly disposed medical waste is not as great as that from a variety of other pollutants, few incidents of pollution have a greater capacity to elicit feelings of disgust among our citizens. The reputation for the Bay as "the land of pleasant living" is immediately and forcefully jeopardized when syringes, blood vials, bandages and other medical waste wash up on the shorelines.

Unfortunately, such incidents of pollution are symptomatic of a broader situation—the way society has treated the Nation's rivers, bays, and coastal water bodies. From direct discharges of sewage and industrial wastes, to the chemical soup that washes off urban streets, to the variety of agricultural pollutants that storm water carries into our water bodies, we have historically assumed that dilution will be the solution to our waste problems. Now, in graphic and often disgusting examples, nature is throwing it back in our face. The Chesapeake Bay and other water bodies worldwide will be restored only when we stop using them as receptacles for our garbage.

Now some thoughts for improvement. Many of our recommendations for Federal action to reduce pollution were made to an Environment and Public Works Subcommittee of the Senate on September 20th, and I have attached my entire testimony to that committee as an appendix to these written comments, but let me add briefly to that list.

Medical waste needs special attention. Existing programs are clearly not sufficient. Regulations which require tracking similar to that for hazardous waste may be the only feasible method to hold generators, transporters, and disposal facilities responsible.

As you are now aware, having hearing the Governor's testimony, Maryland has enacted emergency regulations to deal with the medical waste problem. I want to go on record as congratulating the Governor and his administration. These wastes now have been elevated to hazardous substance status, which means that the haulers must be certified, materials must be packaged properly, fines may go as high as $25,000 for incidents, and waste must be tracked with a signature form or manifest.

Similar requirements are needed in other States, and EPA can play a key role by developing national guidelines. The Clean Water Act amendments require that cities with populations of over 100,000 characterize the pollutants coming from storm drains. EPA must require that floatable waste be identified in addition to the conventional pollutants normally measured. This added requirement would help to assess the level of discharge of medical waste from this potential source.

Offshore dumping may also cause problems, even to the Chesapeake Bay. NOAA data indicate that coastal shelf currents off New York and New Jersey move toward the middle Atlantic Coast and the mouth of the Chesapeake Bay. Buoys dropped offshore have actually washed up into the Chesapeake, as far up as the Maryland/Virginia line. These findings show that permitted offshore dumping of sludge and industrial wastes have an adverse effect on the water entering the Bay and/or on ocean-spawning fish.

Yes, coastal research is necessary, but while we are waiting, let's stop playing Russian roulette with our environment. End ocean dumping now. Just as the Chesapeake Bay has been assaulted by a large number of different sources of pollution which are often indistinguishable from each other, so is the coastal shelf. The mindset that the environment can handle tons of pollutants if sufficient dilution is available has been proved wrong too many times in coastal water bodies.

With specific regard to NOAA, we know that the agency conducts trend monitoring for toxins and fish in sediments in the Chesapeake Bay. The sampling stations, however, are limited in number and do not extend into the urban and industrial areas. NOAA should develop similar trend information for common industrial contaminants in the vicinity of the major industrial and metropolitan centers on the Bay. Reports of PCBs in bluefish and other species on the Atlantic Coast and in the bays lead us to believe that much chemical detective work is needed.

Finally, NOAA has earmarked $8 million in research funds for the Bay. Priorities for expending these funds should not be established by NOAA in a vacuum, but should be made in cooperation with EPA, other Federal agencies, and the States who are participating in the Chesapeake Bay program.

Let me conclude by saying quite simply that we should do a better job of listening to the people of this country. They we are fed up with pollution. It's time to take a stand for a clean environment, and while that may be costly, the price of inaction is going to be far more expensive in the long run.

Again, thank you for holding these hearings, and I appreciate the opportunity to testify.

[The prepared statement of Mr. Baker follows:]

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"FEDERAL ACTIONS NECESSARY TO PROTECT COASTAL WATERS AND THE CHESAPEAKE BAY FROM MEDICAL WASTE CONTAMINATION AND POLLUTION"

Statement of
WILLIAM C.BAKER
PRESIDENT
CHESAPEAKE BAY FOUNDATION

Before the

UNITED STATES CONGRESS
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE,
RESEARCH, AND ENVIRONMENT

October 3, 1988

Annapolis, Maryland

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I. INTRODUCTION

The Chesapeake Bay Foundation (CBF) is a nonprofit organization dedicated to the protection and restoration of the Chesapeake Bay and its resources. Founded in 1966, we now have more than 60,000 members representing every state in the Union and 14 foreign countries. CBF offices are located in Annapolis, Richmond, and Harrisburg. Programs include environmental education, land preservation, environmental advocacy, and legal defense.

The summer of 1988 has taken a heavy toll on the environment of our planet. Nowhere has this price of pollution been greater than on the Chesapeake Bay. From medical wastes on our shores, to bluefish and rockfish dying in numbers greater than ever before seen, to the second largest oil spill in the Bay's history, the summer of '88 has not been pretty. A brief excursion on the Bay tells a sorry story. You don't have to be a scientist to look at this water and know that the Bay is severely stressed.

Although the potential for water quality degradation to the Chesapeake Bay from improperly disposed medical wastes is not as great as that from a variety of other pollutants, few other incidents of pollution have a greater capacity to elicit feelings of disgust among Bay-area residents. The reputation for the Bay as "The Land of Pleasant Living" is immediately and forcefully jeopardized when syringes, blood vials, bandages, and other medical wastes wash up on shorelines.

Unfortunately, such incidents are symptomatic of the way society has treated the Nation's rivers, bays, and coastal water bodies. From direct discharges of sewage and industrial wastes to the "chemical soup" of pollutants that wash off urban streets with stormwater to the variety of agricultural pollutants that reach our waterways, we have historically assumed that dilution will be the solution to our waste problems. Now, in graphic and often disgusting examples, nature is throwing our waste back at us. The Chesapeake Bay and other bodies of water world-wide will be restored only when we stop using them as receptacles for our waste.

The Chesapeake Bay Foundation supports recent actions taken by the State of Maryland to address the medical waste problem. We urge that such measures be undertaken nation-wide with all deliberate speed. Furthermore, we have a number of other recommendations for federal actions to reduce the pollution of our Nation's waters. Many of these were made to the U.S. Senate Committee on Environment and Public Works Subcommittee on Environmental Protection on September 20. (CBF's comments for that Committee are presented as an appendix to the written testimony delivered hear today.)

II. BACKGROUND

In our role as the Chesapeake Bay's chief advocate, we have seen a steady decline in water quality and productive fisheries in the region. The Bay and its major tributaries are suffering from heavy agricultural run-off, poorly treated sewage, industrial waste water discharged directly into the Bay or being dumped into city sewage treatment plants which lack the ability to treat waste adequately. In addition, stormwater from urban areas is washing pollutants and trash from the city streets into the Bay. Urban runoff also contains raw sewage overflows because the same storms that deliver the rain also knock out sewage pumping stations and overload sewer lines. This source of raw sewage may account for some of the medical wastes and personal hygiene debris found along our shorelines. The discovery of medical wastes, and other garbage on the shore is not a problem limited to the beaches of New Jersey or New England. Syringes and other medical paraphernalia washed ashore in Dundalk near Baltimore and in Pasadena in the northern part of this county.

The problems that stem from low-levels of dissolved oxygen have been acute this past summer and our telephones have been "ringing off the hook" with more fish-kill reports than in any year previously recorded. The number of species involved was high and included the threatened rockfish, or striped bass, as well as bluefish, sea trout, and the bottom-dwelling oyster toad fish. Excess nutrients in the Bay from agricultural and municipal wastes have produced unnaturally high algae populations. Oxygen depletion results from the decomposition of the dead algae cells and other organic waste.

Due to the Bay's pollution problems, the harvest of seafood in the Chesapeake Bay has shifted in the last 10 years away from species which reproduce in fresh water and from the depleted oyster fisheries toward an increased reliance on species that breed in the relative safety of ocean waters. These include bluefish, the famed "beautiful Swimmer" the blue crab, menhaden, and sea trout (See attached charts, pages 7-9).

We recognize that the ecological integrity of the Chesapeake Bay is tied to health of the adjacent ocean waters. Moreover we are now even more reliant on the ocean for our seafood production. Accordingly, we support measures to insure that we do not foul it as well.

We are already seeing signs of ocean stress, offshore algae blooms including toxin-producing red tides, wash-ups of dead marine mammals, oxygen depleted coastal shelf bottom waters, and the ugly signs of dumped medical debris. We must put an end to environmental insults such as sewage sludge dumping, industrial waste discharges, and improper medical waste disposal. In addition, we must increase our understanding of the physical, biological, and chemical processes that determine the water quality and provide for fisheries in the Chesapeake Bay. The Chesapeake Bay Foundation has several recommendations which we would like to be added to your agenda of protecting and understanding coastal ecosystems.

III. RECOMMENDATIONS

1. Data already developed by the National Oceanographic and Atmospheric Administration (NOAA) of the Commerce Department already seem to indicate the coastal shelf currents off New York and New Jersey move towards the middle Atlantic coast and the Chesapeake Bay mouth (see attached chart page 10). These findings produce concern that permitted offshore dumping of sludge and industrial wastes may have an adverse effect on the water entering the Bay or on the ocean spawning fish on which we now depend for Bay fisheries. Coastal research is necessary to understand the importance of offshore winds and currents on the successful reproduction of commercially important species in the Bay. In addition, water quality information is needed from these waters to assess biological effects.

2. Offshore dumping of sewage sludge by New Jersey and New York must be phased out as well as acid waste dumping by industry through legislation. Just as the Chesapeake Bay has been assaulted by a large number of different sources of pollution which are often indistinguishable from each other, so is the coastal shelf. The mindset that the environment can "handle" tons of pollutants, if sufficient dilution is available, has been proved wrong too many times in coastal water bodies. This is occurring in the Chesapeake Bay. The Great Lakes, Baltic Sea, North Sea and Mediterranean Sea are also good examples. Anoxic, oxygen depleted waters, and toxic contaminants are found in each.

3. Pollution control programs must be strictly enforced. Special emphasis should be placed on implementing "pretreatment" programs which require cities to regulate industrial dumping to the sewers. Additional attention should be paid to stormwater run-off and stormwater induced overflows of municipal sewage. Federal funding of corrections of combined sewer overflows and treatment of street and parking lot run-off through site-retention and infiltration need to be higher priorities in Clean Water Act implementation.

It is our understanding that current efforts to regulate stormwater in the 1987 Clean Water Act Amendments require that cities with populations over 100,000 characterize the pollutants coming from storm drains. CBF believes that this effort, just beginning, would be enhanced if EPA would require that "floatable" waste be identified in addition to the conventional pollutants normally measured. This added requirement would help to assess the level of discharge of medical wastes from this potential source.

4. Medical wastes clearly need special attention. Existing programs which require separation of these materials from traditional garbage are clearly not always sufficient. Regulations or legislation which requires tracking of disposal routes, similar to Resource Conservation and Recovery Act requirements for hazardous waste may be the only feasible method to hold generators, transporters, and disposal facilities responsible.

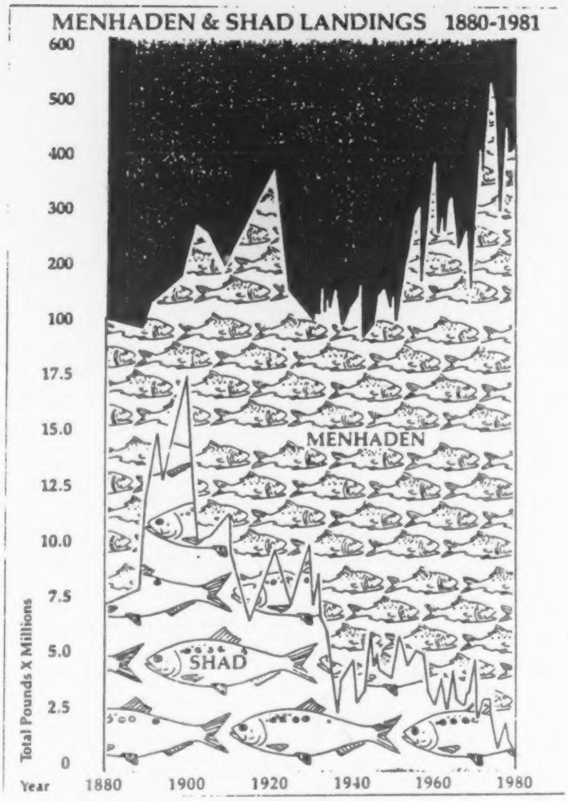
As you are probably aware, Maryland has enacted emergency regulations to deal with the medical waste problem. As of September 28, 1988 these wastes have been elevated to "hazardous substances" status which means that haulers must be certified, materials must be packaged properly, fines may go as high as $25,000 per incident, and wastes must be "tracked" with a signature form or manifest. Similar requirements are needed in other states, and the EPA could play a key role by developing national guidelines.

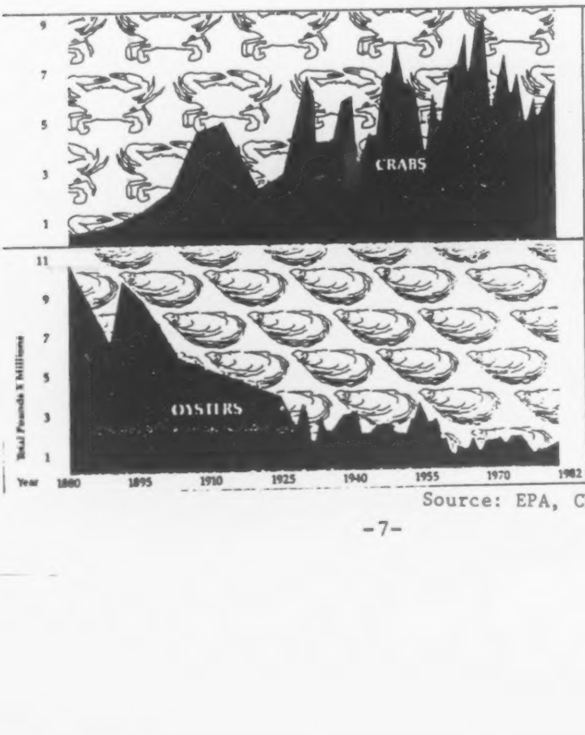
5. NOAA conducts trend monitoring for toxins in fish and sediments in the Chesapeake Bay. The sampling stations, however, are limited in number and do not extend into the urban, and commercial areas. NOAA should develop similar trend information for common industrial contaminants in the vicinity of the major industrial and metropolitan centers on the Bay. Scattered reports of PCB's in bluefish and other species on the Atlantic coast and in its bays leads us to believe that much chemical detective work is needed to find the sources.

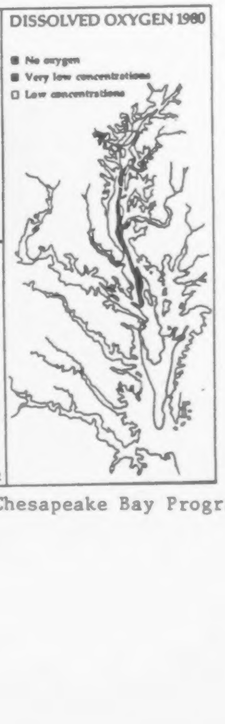
In addition, NOAA has earmarked $8 million in research funds for the Chesapeake Bay. Priorities for expending these funds should not be established by NOAA alone, but should be made in cooperation with EPA and other federal agencies, the States and other participants in the Chesapeake Bay Program.

Once again, thank you for the opportunity to give you our perspectives on the disgraceful pollution episodes we have seen this past summer. It is our hope that a combination of strict enforcement, oceanographic research, tighter control requirements, and a change in the attitude that coastal waters can assimilate huge volumes of wastes will help prevent a similar reoccurrences.

Attachment 1

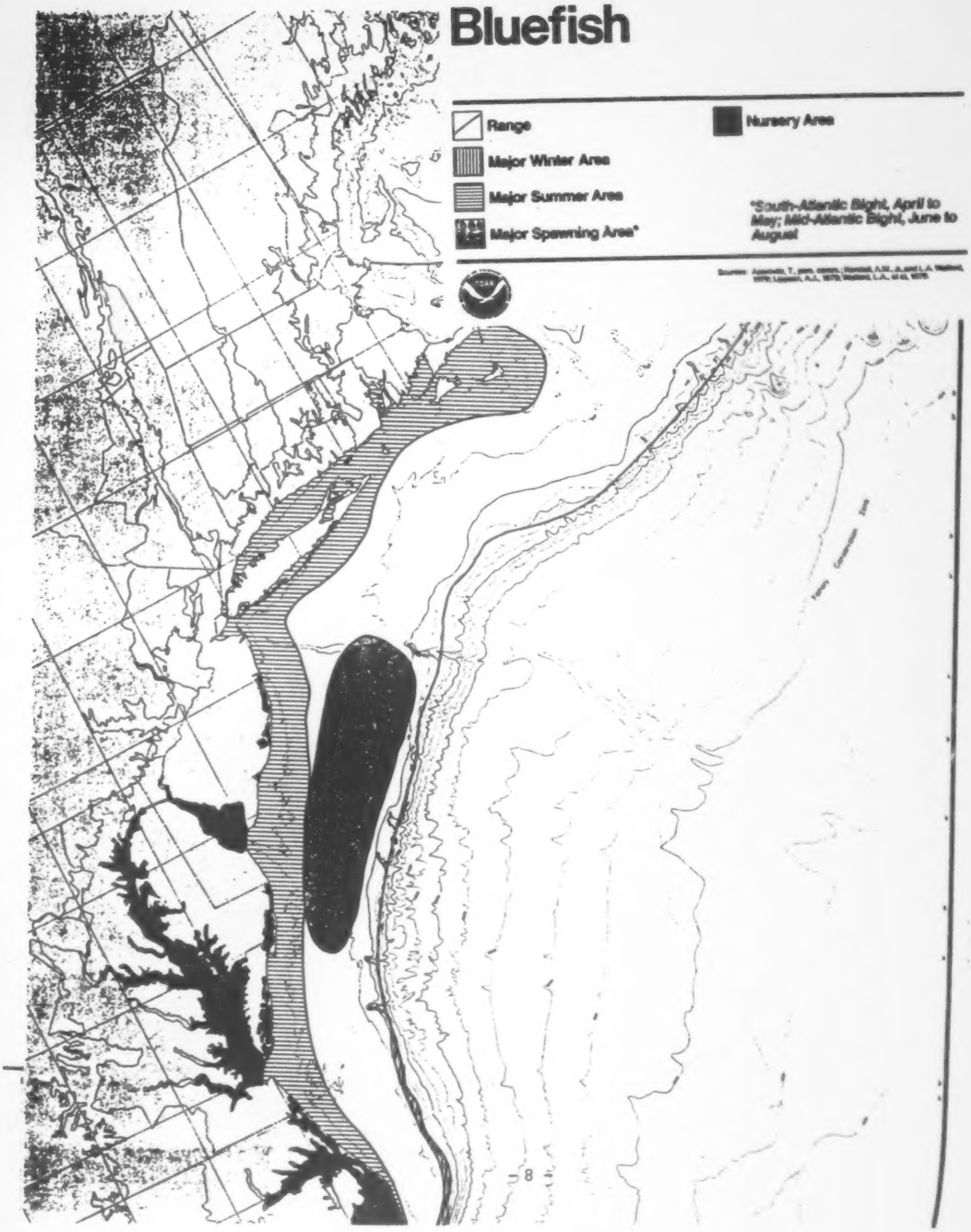




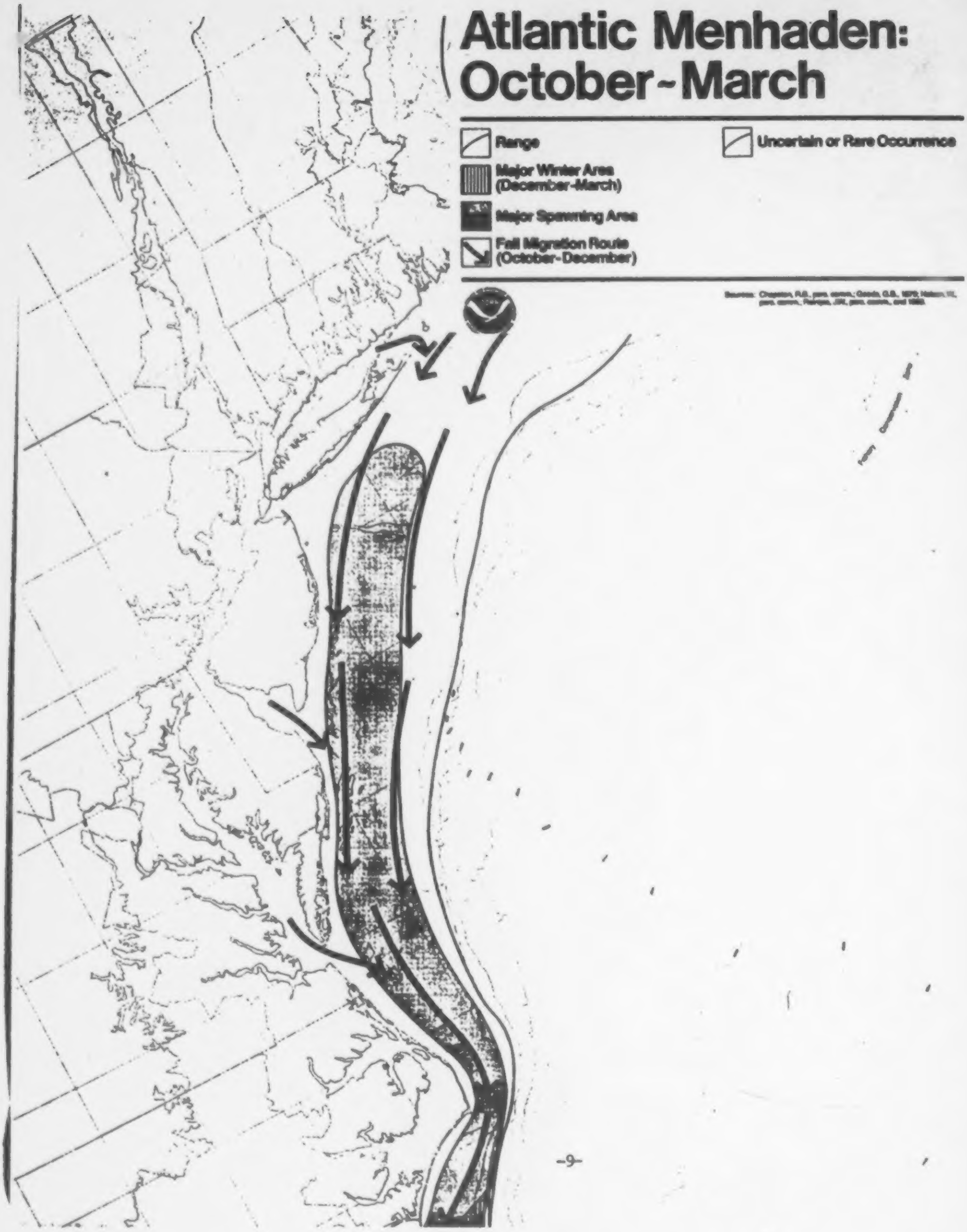

DISSOLVED OXYGEN 1980
■ No oxygen
■ Very low concentrations
□ Low concentrations

Source: EPA, Chesapeake Bay Program 1983

Bluefish


Range
Major Winter Area
Major Summer Area
Major Spawning Area*
Nursery Area
*South-Atlantic Bight, April to May; Mid-Atlantic Bight, June to August
Fishery Conservation Zone
8

Sources: [illegible]

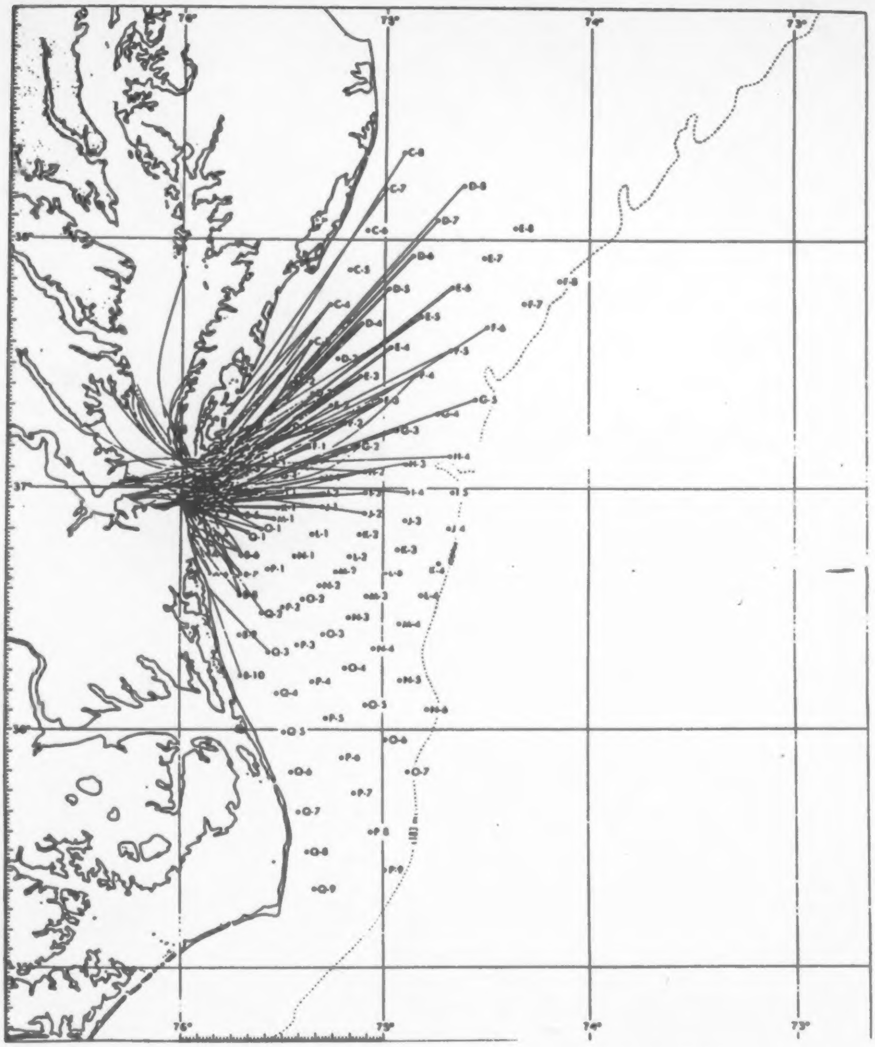


Atlantic Menhaden: October-March

Range
Uncertain or Rare Occurrence
Major Winter Area (December-March)
Major Spawning Area
Fall Migration Route (October-December)
Fishery Conservation Zone

Sources: Chapoton, R.B., pers. comm.; Goode, G.B., 1879; Nelson, W., pers. comm.; Reintjes, J.W., pers. comm., and 1969.

Attachment 2


76°
75°
74°
73°
38°
37°
36°
183 m

Source: 1967 Report to Dept. of Commerce by J. J. Norcross & E. M. Stanley, Virginia Institute of Marine Science.

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"RECOMMENDATIONS FOR FEDERAL ACTION TO AID CHESAPEAKE BAY RESTORATION"

Statement of

WILLIAM C. BAKER
PRESIDENT
CHESAPEAKE BAY FOUNDATION

before the

UNITED STATES SENATE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON ENVIRONMENTAL PROTECTION

September 20, 1988

Washington, D.C.

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I. Introduction

The Chesapeake Bay Foundation (CBF) is a nonprofit organization dedicated to the protection and restoration of the Chesapeake Bay and its resources. Founded in 1966, we now have more than 60,000 members representing every state in the Union and 14 foreign countries. CBF has offices in Annapolis, MD, Richmond, VA, and Harrisburg, PA. With programs in environmental education, land preservation, environmental advocacy and legal defense, CBF is actively involved in all facets of the Chesapeake Bay cleanup efforts.

II. Background

On June 24, 1986, in a hearing convened by Senator Charles Mathias, EPA Administrator Lee Thomas first called for a new Chesapeake Bay "Agreement." Subsequently, Governor Gerald Baliles added further definition to the concept and recommended moving ahead with it. He soon received the enthusiastic endorsement of Governors William Donald Schaefer and Robert Casey, and the three of them, with Mayor Barry, Administrator Thomas and Chesapeake Bay Commission Chairman Cole, developed and signed the historic 1987 Agreement. We commend all of the signatories to that document for their diligent attention to meeting on schedule the commitments contained therein. Much more needs to be done, of course, but we have a good start.

Of particular note is the center-piece of the Basinwide Nutrient Reduction Strategy. The strategy is far-reaching, comprehensive, and yes, expensive. It is a clear road map depicting the route by which the several signatory jurisdictions must travel to accomplish a 40 percent reduction in nutrient loads by the end of the century.

Also worth mentioning is the ongoing development of a Basinwide Toxics Reduction Strategy. This plan, more difficult to draft than the nutrient reduction plan, must effect significant toxic load reductions in the soil, water and air of the region, without the benefit of concrete quantitative targets, as was the case in the nutrient strategy. It is our hope that this open-ended commitment will motivate government to seek dramatic reductions on toxic discharges into the Bay watershed. Merely adopting the elements of the Clean Water Act as amended is insufficient. The challenge is great, but we feel that the very survival of the Chesapeake Bay is at stake.

Finally, the states and the District of Columbia are drafting a Baywide policy for the protection of tidal and non-tidal wetlands. Overall, the most recent draft of the strategy is quite good, although a few parts still need improvement. The wetlands strategy, coupled with recent efforts in Maryland and Virginia to initiate state legislation protecting non-tidal wetlands suggests that real gains in wetlands protection within the Chesapeake Bay watershed are imminent.

III. A Role for the Federal Government to Play

The Environmental Protection Agency deserves special praise for its efforts in bringing the states together. Such interstate cooperation was unheard of ten years ago. EPA has also provided money for the scientific investigation that prompted much of the present Chesapeake clean-up activity as well as funding for the regional liaison office in Annapolis. That office has been a valuable coordinating mechanism for the states, especially in conjunction with efforts related to the federal grants provided by the Chesapeake Bay Program.

But while EPA has promoted cooperation among the states, it has shown little inclination to take a leadership role. On matters such as setting water quality standards, financing water quality improvements, or aggressively enforcing existing laws, EPA defers to the states. Moreover, in cases where EPA plays an ancillary role to other federal agencies, as is the case of wetlands review, EPA has all too often been a timid environmental advocate.

That the present EPA prefers a diminished role in environmental protection is poignantly ironic, especially at a time when our nation's environment is so obviously and severely stressed. Daily, we read stories about acid rain, the greenhouse effect, and depleted ozone. Nightly, we watch clips of medical wastes and dead fish washing ashore on our beaches. And sadly, nowhere are the stresses to our environment more severe than in the Chesapeake Bay, once called the crown jewel of the world's estuaries, but now a body of water that is struggling for its very survival.

The federal government, and especially EPA, should play a very active role in the Chesapeake Bay's management, because pollution ignores political boundaries. In addition, the federal government alone has sufficient resources to tackle pollution problems on the grand scale that the Chesapeake Bay demands. Moreover, the Chesapeake Bay is a national treasure, and ought to provide the country and the federal government with a national model on how to effectively deal with pollution concerns that are plaguing all of our nation's coastal resources. If not EPA and her sister agencies, who else will take on the very difficult task of developing and recommending the truly regional strategies that will be required to successfully address the Bay's ills?

IV. Proposals for Federal Involvement in the Bay Clean-up

A. Agriculture

Agriculture constitutes the principal component of non-point source pollution, which accounts for fully two-thirds of the Bay's annual nitrogen, and about one-third of its phosphorus loads. And yet, agriculture has been largely exempted from government measures aimed at abating pollution under the Clean Water Act. Instead, the historic federal approach to stemming agricultural runoff has been characterized by uneven regional planning and voluntary "compliance."

It is fair to say that planning and "volunteerism" have so far reaped scant returns with regard to pollution abatement nation-wide. This is due in part to the high cost of volunteerism. At present, most conservation practices are cost-shared in excess of 50 percent by state and federal agencies. Moreover, historically, many cost-shared practices were implemented on lands without serious erosion problems. Finally, soil conservation programs have traditionally focused on farm productivity and sought to conserve the soil resource. Unfortunately, soil conservation practices are not necessarily adequate water pollution abatement practices. This is particularly true with regard to nitrogen which dissolves in surface and groundwater rather than adhering to sediment-- which is the object of most agricultural Best Management Practices.

Recently, more attention has been devoted to nutrient management practices, especially in the Bay states. Also, targeting of state and federal resources to specific regions that have special water quality problems is increasing. And, new federal laws have sought to take the federal government out of the business of subsidizing abusive land-use practices. These developments, especially targeting governmental resources and eliminating subsides for poor land use practices, hold the greatest promise for the future. While both the states and the federal government have moved in this direction, the pace of change must accelerate, and the commitment must endure if water quality impairment due to agricultural pollution is to be eliminated.

1. Conservation Reserve Program

One program that holds special promise for the Bay is the Conservation Reserve Program (CRP). CRP pays farmers to remove from production highly erodible farmland or land adjoining waterways. Until recently CRP was not economically attractive to area farmers. However, increased federal rental rates have encouraged participation. New state incentives "piggybacking" on the federal program have further augmented area sign-ups.

Nevertheless, CRP is not likely to reach its true potential without an extension and broadening of its mandate. The program is presently authorized through 1990, which is too short a period to take full advantage of the program. Moreover, greater water quality benefits could be had if CRP were more directly targeted to water quality. By expanding eligibility, CRP could be used to protect wetlands and groundwater recharge areas, for example, in addition to providing stream buffers.

2. Conservation Compliance

In conjunction with extending CRP authorization, care should be exercised to ensure that conservation compliance is implemented and enforced. Conservation compliance prohibits farmers who cultivate highly erodible lands without conservation practices from receiving federal farm subsidies. This law accomplishes the necessary effect of getting the federal government out of the business of subsidizing abusive land use practices.

Unfortunately, the U.S. Department of Agriculture has already begun to retreat from its earlier resolve to implement this law. In an attempt to mollify its constituency, USDA has opened a significant loophole in conservation compliance (Alternative Conservation Systems). In doing so, USDA has diminished the conservation potential of conservation compliance, and thereby undercut the states' Nutrient Reduction Strategy, which relied heavily on conservation compliance in order to meet the 40 percent nutrient reduction goal.

If conservation compliance is to work, then the federal government will have to bear the courage of its convictions. The policy is sound-- the federal government should not subsidize abusive farming. Conservation Compliance may sting some farmers, but the law is a fair one, and should be implemented without self-defeating loopholes.

3. Clean Water Act Section 319

In addition to bolstering the Food Security Act's conservation programs, it is time to meet the commitment Congress made to address nonpoint source pollution by funding Clean Water Act section 319. Section 319 requires the states to identify state waters that are impaired by agricultural and other nonpoint source pollution. The states are also required to write management plans that will eliminate nonpoint source impairment.

Although section 319 was authorized in the 1987 Clean Water Act Amendments, no funds have yet been appropriated. This type of half-measure perpetuates an historic and unfortunate federal disregard for nonpoint source pollution. Federal neglect is a significant reason that nonpoint source pollution now frequently predominates as the cause of water quality impairment around the nation.

In order to reverse the trend, Congress must ensure that adequate funds are available to enable the states to identify diverse pollution sources, plan for their clean-up, and implement best management practices and other innovative clean-up strategies. Moreover, it is time to go beyond section 319 to take a hard look at whether voluntary programs alone will suffice to eliminate nonpoint source and agriculturally related water quality impairment of our nation's waters.

B. Air Pollution

To date, the Bay cleanup has focused on water quality and water-based pollution. This media-specific approach is the hallmark of national environmental legislation and regulation. Nature, however, is not so easily pigeon-holed, and indeed, our best scientific data indicate that as much as 25% of all nitrogen and millions of pounds of toxic chemicals enter the Bay not as water-borne pollutants, but through atmospheric deposition.

This revelation, that clean water depends upon clean air, so far has escaped incorporation into the Bay restoration programs. To continue to ignore the tremendous impact air pollution has on the Bay will likely foreclose our clean-up efforts. The time has come for the Chesapeake Bay Program participants to look above the horizon and directly address regional air quality problems.

Because air contaminants often originate from distant sources, the federal government must take the lead in any air pollution reduction effort. A critical first step is to regulate power plant emissions that cause acid rain, and NO_x pollution. Several bills are pending in the U.S. Congress that would reduce current levels of these emissions. Prompt and aggressive action will aid efforts to reduce nutrient loadings to the Bay, and acidification of vital finfish habitat.

Recent Right-to-Know legislation has provided graphic evidence that very few of the myriad sources of toxic chemical discharges are regulated under existing law. Airborne toxics are a case in point. A recent study found that less than one fourth of reported air toxic emissions in Maryland were subject to any pollution controls at all.

This abject lack of regulatory control on airborne toxics flies in the face of public assumptions that the federal government and/or the states are protecting public health and the environment from poisonous, and often carcinogenic chemicals.

Now is the time to act. Specifically, the states must incorporate air toxics in their Bay-wide toxics reduction strategy. In addition, Congress and the President must act to break the logjam on the pending reauthorization of the Clean Air Act, and incorporate curbs on airborne toxics in the new legislation.

C. Point-source nutrients

1. Advanced Wastewater Treatment Funding

In 1983 EPA released several reports describing the state of the Bay, and the reasons for its decline. Excessive nutrient loadings, i.e., nitrogen and phosphorus, were identified as the principal cause of worsening water quality. Since that time, EPA has consistently stressed the need to reduce nutrient loadings Baywide, and has channeled Bay Program grants into nonpoint source controls to reduce nutrient-rich runoff from farms and development. More recently, EPA took the lead in calling for Baywide nutrient reductions of 40 percent-- for both nonpoint sources, as well as industrial and municipal point sources.

Notwithstanding EPA's consistent emphasis on nutrient reductions, its policy of funding nonpoint source nutrient controls, and its strenuous support of the 40 percent nutrient reduction goal, EPA refuses to allow the states to use federal grants to fund nitrogen removal at municipal sewage treatment plants.

Nutrient removal, also called advanced wastewater treatment (AWT), is essential in order to attain the Bay Agreement goal of a 40 percent nutrient reduction by 2000. Sewage treatment plants account for 33 percent of nitrogen, and 61 percent of phosphorus loadings each year. Maryland and Virginia have acknowledged the need for AWT and have promised to construct the necessary facilities at all significant sewage treatment plants.

EPA needs to revisit its nutrient reduction funding policy in light of the 40 percent reduction strategy. This new management strategy supercedes existing Chesapeake Bay nutrient reduction policies, and should provide the basis for future EPA funding decisions. By amending its policy, EPA will provide needed seed money for necessary nutrient reduction projects, as well as remove a significant impediment to the adoption of nutrient standards by the various jurisdictions.

2. Nutrient standards

The time has come for EPA to require states to incorporate nutrient effluent limits in permits for major sewage treatment plants and significant industrial dischargers. Mandating effluent limits would aid the states in implementing advanced wastewater treatment at significant municipal sewage plants. Moreover, it would ensure equitable sharing of nutrient load reductions among the jurisdictions.

3. Monitoring and Modeling

In order to establish and enforce nutrient standards, EPA needs to ensure that uniform monitoring within the entire Chesapeake Bay watershed occurs. In addition, EPA must make certain that all necessary data required for proper development, calibration and utilization of the next generation Chesapeake Bay management model are identified and collected so as to provide appropriate and timely input for that model in 1991.

D. Wetlands

In recent times we have come to understand that wetlands provide a wealth of social benefits, including flood storage, groundwater recharge, pollution abatement, wildlife habitat and open space. And yet, notwithstanding federal regulation under the Clean Water Act section 404, our Nation's wetlands resources continue to shrink. In the Chesapeake Bay watershed, our best statistics indicate that from the mid 1950's to the late 1970's about 133,000 acres of wetlands have been lost. These invaluable lands are destroyed in the name of development, agriculture, forestry, and flood prevention. It is indisputable that continued losses of irreplaceable wetlands will profoundly affect the Bay's ability to regain its once abundant fisheries and wildlife.

In order to reverse the continuing trend of unacceptable wetlands losses we must first establish a national policy embodied in federal legislation mandating wetlands protection. National policy should be to effect a net gain in our wetlands resource. To accomplish this goal, section 404 of the Clean Water Act must be overhauled, and a clear mandate to preserve wetlands must be incorporated into new law. Thus, the Army Corps of Engineers, or an alternate agency, must be given the affirmative duty to protect and preserve our nation's existing wetlands.

In addition, federal jurisdiction must be broadened to include all activities affecting wetlands, and cumulative impacts of wetlands conversions must be incorporated into wetlands review. It is only through such comprehensive authority and review that a "net gain" national goal can be accomplished.

Furthermore, the Corps has established "nationwide" permits, some of which subvert the intent of section 404 by allowing broad categories of activities with potentially large impacts to occur on a national scale within a framework of permits designed for specific activities with limited impact. No information is available on the impacts of activities on these areas, yet the activities are blindly presumed to be insignificant, both individually and cumulatively..

Finally, it is time to acknowledge that preservation of the nation's wetlands must incorporate acquisition of a portion of privately held wetlands. Congress should create a National Wetlands Fund to raise money for federal acquisition (fee simple or development rights) of wetlands. National Wetlands Fund monies might be raised through taxes on real estate development or other wetlands threatening activities. The purchase of these lands (or their development rights) will prove to be an extremely cost effective investment in the future of the Bay.

E. Toxics

A great deal of attention in the last several years has been placed on nutrient pollution of the Bay. Toxic chemical pollution has been relatively overlooked, partly because the problem is not well understood, partly because the public has long assumed that toxic chemical discharges are regulated already. As we have come to better understand,toxics, however, we have come to realize that the latter assumption has no basis in fact. Indeed toxic emissions are rarely regulated: unfortunately, dilution is still the most common solution to toxic waste problems. In only one instance are toxic discharges significantly controlled, i.e., for direct discharges to water through NPDES. Even in this case, only some chemicals are regulated, and only to the extent of existing technology and enforcement.

As a result of many years of unregulated toxic dumping, there have developed "toxic hotspots," notably in Baltimore

Harbor and Elizabeth River. Both illustrate how acute the situation with regard to the past uncontrolled discharges of toxic wastes is. For well over one hundred years, vast quantities of the most toxic chemicals from the industries surrounding these harbors have poured into their waters. The bottom sediments are devoid of all but the most hardy species of worm. In Baltimore, this sediment contains such a "beautiful" distribution of toxics that samples of it are reportedly sold to laboratories around the country to aid in calibrating gas chromatographs.

In addition, recent studies have indicated that the uppermost layer of the Bay, the "microlayer," is also highly contaminated. This microlayer plays an essential role in the development of many species, and the presence of certain toxics may interfere with those processes. Unfortunately, no comprehensive research plan for the Bay exists to ensure that issues such as this are addressed. The toxics strategy to be developed under the new Chesapeake Bay Agreement should include such a plan as one of its key elements.

In order to halt the toxification of the Bay and other vital coastal resources, the federal government must commit itself and the states to identifying all significant sources and pathways of toxic discharge and to identifying the adverse impacts these discharges cause. Eliminating discharges that impair receiving water quality and cleaning-up toxic hotspots that prevent waters from returning to their designated use status must proceed immediately.

In addition, specific measures must be taken to address several broad categories of activities that pose special environmental risks to the Bay and to coastal areas generally.

1. Water Quality Standards for Toxic Discharges

All Chesapeake jurisdictions must strive to expeditiously comply with the 1987 Amendments to the Clean Water Act which call for reducing toxic discharges by identifying waters where the application of "best available technology" will not protect water quality and where additional controls are necessary. Congress showed its concern for toxic pollution and its impatience with existing programs when it enacted these "post-BAT" requirements. In the past, states have been slow to establish water quality standards with numeric criteria for toxic pollutants, and Congress made it clear in the amendments that there can be no more delay. Such standards are an essential element of a comprehensive control program, which should include standards, stringent bio-monitoring requirements and aggressive enforcement against non-compliers.

Bio-monitoring, that is, determining the toxicity of an effluent by its impact on specific aquatic organisms, is an extremely important tool, but it cannot do the job alone. It is most often used to determine acute effects and has serious limitations when used to assess the long-term effects of exposure to low levels of toxics. It does not take into account bio-accumulation in organisms or bio-magnification up the food chain. Nor does it address effects on human health.

While we believe bio-monitoring should be required of all major dischargers, both industrial and municipal, we must also have water quality standards for specific chemicals. At the present time neither Maryland nor Virginia have more than a handful of such standards, but are required by the Clean Water Act amendments to develop them.

We recognize the impossibility of immediately creating standards for all of the thousands of chemicals now in existence, but we can at least begin by focusing on those pollutants already identified by the EPA as posing problems in the Chesapeake Bay. Certainly metals should be targeted, along with compounds which are carcinogenic or which have special risks for aquatic or human life. Standards for toxics in sediments should be developed also.

EPA already has numeric criteria for a number of toxics in saline water, and these criteria are readily adaptable to the Bay's estuarine conditions. The states should move promptly to employ these criteria in establishing state standards. The Bay states should strive to achieve compliance with the Clean Water Act requirements as rapidly as possible, in advance of deadlines if that is feasible.

2. Pesticides

In addition to regulating oil transport in the watershed, it is time to take a much closer look at pesticides. While other toxic discharges are inadvertent, pesticides are intentionally introduced into the environment. As a nation, we literally pour on the ground more than 1.4 billion pounds of pesticides each year. And while we are not certain of the ultimate net effect of this practice, we are beginning to see serious adverse impacts.

For instance, the bald eagle, one of the Chesapeake's most valued and symbolic residents, is dying as a result of pesticide use in the region. Pesticides have also been implicated in the loss of aquatic plants, and have been found in high concentrations in some fish. Moreover, and more ominously, pesticides are now being discovered in our region's drinking water. At last count, at least 9 pesticides including alachlor, atrazine, carbofuran and metolachlor have been found in the groundwater in the Bay watershed.

Present regulation of pesticide use is not adequately protecting the environment or our drinking water. Comprehensive and aggressive action is needed now to stem the flow of pesticides onto the land and ultimately into the Bay's ecosystem.

The federal government must take steps to increase understanding of pesticide use by mandating collection and dissemination of pesticide use statistics. Also, better training of applicators is needed, as is research and extension on alternatives to chemical pest control. Furthermore, EPA must accelerate its reregistration process, and increase its efforts to fill in health and environmental fate information gaps. In addition, the current system of paying producers for cancelled pesticides must stop.

Finally, Congress and EPA must act decisively, and immediately, to adopt and implement a non-degradation policy for our nation's groundwater resource. It is both unconscionable and unwise to accept progressive contamination of this priceless resource for short-term economic convenience. It is undisputed that the cheapest protection for our groundwater resource is prevention of contamination in the first place. EPA's present groundwater policy encourages creeping contamination and short-sightedness and should be replaced by a true non-degradation policy.

3. Wastewater Pretreatment

Another important area that demands our immediate attention is pretreatment. Thousands of industries are not subject to National Pollutant Discharge Elimination System (NPDES) permits under the Clean Water Act because they discharge, not into water bodies, but into sewers. Unfortunately, municipal sewage treatment plants were never intended to handle the chemical brew which comes from industrial facilities. Consequently, many of these toxics pass through the plants and into our waters, untreated. Indeed, flushing untreated toxics through our sewage treatment plants can interfere with the operation of the plants, ruining their biological processes, corroding equipment, and threatening the health and even lives of plant workers. Toxics also contaminate the sludge produced in the treatment process, making it difficult and costly to dispose of.

Although pretreatment was first mandated by the Clean Water Act in 1972, EPA has been extremely slow to implement the program. Regulations are now in place, however, and those municipalities which must establish pretreatment programs have been identified and local programs have been approved.

Front line responsibility for implementing the program is placed on the municipality itself, which may often be the least able of the various government entities to do the job. Small municipalities may lack expertise, staff and funding to carry out the complex program effectively. Unless they receive technical support and vigilant supervision from the states and EPA, the entire pretreatment program could be jeopardized.

Maryland is the only Bay state to have been delegated oversight of the program, and it may be premature to judge at this time how well it is doing. CBF is extremely concerned about the pretreatment program and has undertaken a project to review the current status of pretreatment around the Bay, with a report to be published in November. We urge that concerted efforts be made by EPA and the states to ensure that the pretreatment program works as Congress intended.

4. Oil and Gas Transport

Recently, the second largest oil spill in the history of the Chesapeake Bay occurred. The accident, in which over 210,000 gallons of petroleum were dumped into the confined waters of the Chesapeake Bay, is symptomatic of the potentially disastrous situation that surrounds the transport of oil and other hazardous materials on the Chesapeake Bay. Scientific studies have demonstrated that petroleum spilled in the estuary is remarkably persistent, and that the effects of petroleum in an estuary can be catastrophic. Petroleum may be taken up by a variety of fin or shellfish, may destroy zooplankton or phytoplankton, or otherwise adversely affect the environment.

As is readily known by all in the marine industry, the tugboat and barge transportation industry is lightly regulated at best. Tighter licensing procedures are needed, as are more stringent inspection procedures, requirements for state-of-the-art technological devices to monitor loading and transfer operations as well as tank levels while in transit, maximum fines for polluters, and greater surveillance and quick response by the Coast Guard to avoid spills and attendant severe environmental damage.

5. Federal Facilities

Although EPA is the only federal signatory to the 1987 Chesapeake Bay Agreement, numerous federal agencies have a role to play in the Bay cleanup. Already, several agencies including USDA, National Oceanographic and Atmospheric Association, U. S. Fish and Wildlife Service, to name a few, have played important roles in the process. These agencies exemplify how the federal government can lead by example in restoring the Bay to its productive potential.

Unfortunately, many federal facilities not only do not provide the model for environmentally sound practices, but actually flout federal law, and contribute to the Bay's problems. For example, both the Navy and the Army have been discovered to have callously neglected environmental concerns in handling, storing and disposing of hazardous waste. Moreover, some federal facilities often discharge wastes without permits, while others' permits are so lax as to provide little environmental protection.

As part of the Bay Agreement process, EPA is required to develop and implement a strategy for control of discharges by federal facilities. Unfortunately, this process has been impaired by federal budget constraints.

In order for the federal government to assume a leadership role by example, it must first apply the goals of the Bay Agreement to itself. Thus, the several sewage treatment plants in the watershed operated by the federal government should seek to accomplish at least a 40 percent reduction in nutrient loadings by implementing advanced wastewater treatment. In addition, federal facilities with exotic toxic discharges should go beyond the Clean Water Act requirements, and assess the biological impacts of their toxic discharges and take immediate steps to eliminate adverse impacts. Finally, Congress must provide adequate funding and aggressive oversight in order to send a clear signal that federal facilities non-compliance with the law will not be countenanced.

F. Habitat and Living Resources

1. Federal Funding for Land Acquisitions

It is no longer novel to assert that activities on the land determines the quality of our waters. Ever more concentrated development increases the pressure on our coastal resources by increasing waste loads as well as by literally burying open space and wildlife habitat under shopping malls, highways and housing tracts.

Development pressures are likely to continue to grow in the future. Predictions are that by 1990, 75 percent of the nation's population will live within 50 miles of the shore.

In order to deal with burgeoning growth, the Chesapeake Bay states have begun to seek to manage growth in sensitive areas through precedent-setting legislation such as

Maryland's Critical Areas Law. This law provides for BMP's and limitations on development within 1000 feet of the Bay and its tidal tributaries.

While the states have initiated action to rationalize development, and they are likely to lead future efforts to regulate land-use, the federal government nonetheless has a vital role to play in this issue.

Foremost in its responsibility is the task of providing federal funding for acquisition of environmentally sensitive lands. Revitalizing the Land and Water Conservation Fund is a necessary step toward accomplishing this goal. Legislation to establish an American Heritage Trust, pending in the U.S. House of Representatives would effect this end. The money from such a trust might be allocated partially to federal land management agencies, and partially to state agencies, or even directly to private, non-profit land trusts.

In addition to increasing funding for acquisition of environmentally sensitive lands, the federal government should increase funding for public recreational lands. Wildlife habitat is not the only casualty of encroaching development-- recreational access lands also are depleted as water-front property becomes ever more scarce and expensive.

2. Fisheries

The need for ongoing involvement of the federal government in coastal interjurisdictional fisheries management and research has been clearly demonstrated by events of recent years. The best example is the Chesapeake Bay population of striped bass which migrates through the waters of twelve coastal states and which experienced a 90% decline in landings since the early 1970's. The Atlantic Striped Bass Conservation Act (H.R. 4124) has been the catalyst for cooperative interstate management and effective restoration programs for striped bass during the last four years. It is crucial that this legislation, including extension of federal funding for the Emergency Striped Bass Research Program, be reauthorized in a timely fashion to continue the restoration process.

Fisheries management in federal waters is governed by the Magnuson Fishery Conservation and Management Act, first passed in 1976 and due for reconsideration in the near future. Much was learned during the first ten years under this landmark legislation. In 1986, a blue ribbon panel appointed by NOAA Administrator Dr. Anthony J. Calio assessed this experience and made several very good recommendations. The Panel's most important recommendation concerned separating the conservation and allocation functions of fisheries management. This necessary step would place absolute limits on harvest based on biological data. We feel that this critical measure should be incorporated into any reauthorization of the Magnuson Act and should be similarly applied to the management of interjurisdictional state fisheries.

There is also a need for a continued federal role in the restoration and maintenance of coastal fisheries habitat. Habitat programs of the National Marine Fisheries Service and the Fish and Wildlife Service should be continued and expanded. In particular, efforts to reopen thousands of miles of coastal tributaries, currently blocked to migratory fish by dams and other obstructions, depend on a continued federal-state partnership. Programs to provide fish passage at the hundreds of obstructions on Chesapeake Bay tributaries will require a commitment of federal expertise in the area of fishery engineering and design. The potential values of restored populations of migratory fish like American shad and blueback herring have been estimated to far outweigh the costs of fish passage programs.

IV. Conclusion

The issues and problems surrounding the Chesapeake Bay restoration Program are numerous and varied. Our testimony today could not possibly touch on all, or even most, of the pressing concerns of citizens and activist who are striving to preserve and protect the Chesapeake Bay. What we have tried to do in our testimony, is highlight significant issues that have a particular and compelling federal component in their resolution.

As our testimony points out, the federal government has a major role to play in virtually every aspect of the Bay clean-up. Whether we are talking about air toxics or wetlands, pretreatment or advanced treatment, the federal government must take an active and leading part, if we are to accomplish our ultimate goal of restoring the Chesapeake Bay to its former majesty and productivity.

In order to facilitate constructive federal involvement in these issues, we hope that Congress will consider our recommendations and heed our advice on the many specific matters raised herein. In addition, Congress and the Administration can generally advance the Bay restoration by providing to the various federal agencies adequate authority and a specific mandate to protect the environment. In the many cases where such authority exists, Congress must press for enforcement of the law. Whether that entails withholding federal subsidies, or empowering citizens to sue, it is imperative to promote and maintain environmental law and order. Finally, Congress and the President must cease to play the appropriations shell game, where authorizations are passed and appropriations are passed over. It is time to take a stand and pay for a clean environment. Because, buying environmental protection today is certain to be much less costly than paying for environmental clean-up tommorow.

Mr. McMillen. Thank you for your testimony.

Ms. Miller?

STATEMENT OF MS. BOYCE THORNE MILLER, STAFF SCIENTIST, THE OCEANIC SOCIETY

Ms. Miller. Thank you, Congressman McMillen. I am Boyce Miller, staff scientist at The Oceanic Society. I would like to testify first, briefly, on the problem of medical waste washing up on our shores, and then turn to the larger issue of ocean pollution, research, and monitoring.

The Atlantic Ocean has been trying to send us a message, and this summer she finally made her point. As a result, there are now several proposed State and Federal laws designed to control and track medical waste disposal. The Oceanic Society supports these efforts, but we are concerned that they be effective. There are two points in particular that I would like to mention.

First, regulating medical waste should include all hazardous materials, not just the narrowly circumscribed category of infectious waste. And, second, laws and regulations should apply to smaller generators of medical waste as well as to large institutions generating in excess of 100 pounds of waste per day.

In my written testimony I have also lent The Oceanic Society's support to seven recommendations put forth by the Natural Resources Defense Council in testimony presented at another hearing on medical waste. EPA has been inexcusably slow to respond, preferring to leave local and State governments to deal with the problem. However, we are encouraged by the public and Congressional response to this last summer's disaster.

Now, as laws are enacted and regulations are implemented so that the problem of medical waste will be phased out, we hope that the much larger problems of oceanic pollution will not be forgotten. The ocean has sent a message. Now the ball is in our court. Will we act fast enough?

It has become increasingly evident that pollution in coastal waters of the United States has reached crisis proportions, as the inflows of nutrients, toxic organics, heavy metals come from urban and industrial outfalls, from runoff, from ocean dumping. Andy Robertson of NOAA has detailed for us some of the effects of pollution which have been measured in various regions around the country. I will quickly summarize some of the more common effects of pollution which are found again and again in coastal waters around the world, no matter what the particulars of the pollution sources.

One, low oxygen concentrations in the water, especially near the bottom; two, fish and shellfish diseases and deformities: Three, contamination of sediments and animal tissue by heavy metals and organics. Four, tidal plankton or algal blooms, including red tides, which are increasing worldwide. Five, habitat loss, especially loss of wetlands. Six, reproductive problems among birds dependent on the marine environment for food. Seven, loss of species diversity and genetic impoverishment in marine ecosystems. Eight, closures of shellfish fishing areas for human health reasons.

All these symptoms are marked in coastal and estuarine waters. The Chesapeake Bay is a prime example of an ecosystem in distress. We are not as optimistic as Governor Schaefer that efforts to date have yet turned the tide in the Chesapeake or in other estuaries. And so, as much-needed research and monitoring is done, we must take the cautious approach and stop all toxic inputs into the estuaries and coastal waters.

Much less is known about the deeper oceans, but there are strong signs of damage there, too. Contrary to EPA's view, dilution of pollutants does not make them disappear. They can still have dramatically bad effects over time, with accumulation.

What is the solution to these problems? Ultimately, of course, there must be strict regulation of all potential pollutants released into the ocean. We currently have some good laws on the books, but the regulations implementing these laws do not go nearly as far as they should. Consequently, the intent of the laws—such as the Ocean Dumping Act—are often not realized.

One of the reasons the regulations are inadequate is that so little is known about the ocean. Its physical, chemical, geological, and biological processes are still poorly understood. We still have so much to learn about how the ocean and the life within it respond to pollution, and how those responses can affect the global environment and ultimately the survival of our own species.

A second reason the regulations don't work is that monitoring efforts are too limited and are ineffective. Monitoring is an essential companion of management procedures, and management plans must adapt to monitoring results as they go along.

The third reason the regulations aren't adequate is that the responsible agencies often don't care. The rate of disintegration of the marine environment far outstrips our rate of acquiring information. The obvious solution to that is more research and more monitoring. I don't mean a little more. The scale on which research and monitoring are supported must increase by orders of magnitude.

In my written testimony I suggested that more support be given to environmentally oriented basic and applied research in the universities, and that research and monitoring programs within agencies such as NOAA and the EPA be expanded vastly. New vitality must be put into these agencies. The academic scientists must get the message that we want to learn about our environment in order to implement appropriate regulations and management plans. The transfer of information between research scientists and regulators and the public must be effective.

All this requires money—big money. The Oceanic Society has and will continue to support new programs of research, and reauthorizations, and increases in existing programs, but none of these to date provides for the programs which are needed to save the environment, our environment, our lives. We are a point in the history of the human species where we will have to purchase a safe environment. If we are not willing to make the expenditures, we cannot expect to survive the environmental changes we as a species are bringing about. It is time to make the choice between spending money to save our Earth and spending money to destroy it.

Thank you for the opportunity to testify at this oversight hearing on medical waste and ocean pollution research and monitoring. I will be happy to answer any questions.

[The prepared statement of Ms. Miller follows:]

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October 3, 1988

**Statement of Boyce Thorne Miller
On Behalf of
The Oceanic Society
Before the
Subcommittee on Natural Resources, Agriculture
Research and Environment
of the House Committee on Science, Space, and Technology
Concerning
Medical Waste and
Ocean Pollution Research and Monitoring**

I am Boyce Thorne Miller, Staff Scientist of the Oceanic Society. The Society is a 45,000 member non-profit organization dedicated to protecting the oceans for the people and wildlife that depend on them for life, livelihood and enjoyment. Through education, research and conservation, the Society promotes understanding and stewardship of marine and coastal environments.

I appreciate the opportunity to testify today at this oversight hearing as your Subcommittee examines the seriousness and extent of threats to the environmental quality of oceanic and coastal waters, and the adequacy of governmental and non-governmental initiatives and responses. This hearing provides an invaluable and timely opportunity to "sound the alarm," to educate decision makers and the public, at large, and to compel actions that are needed to protect, conserve and restore our marine environments.

The oceans, while vast and covering over seventy percent of our planet, are a vulnerable and complex environment. Numerous unique and important species live in or depend upon the oceans. The oceans are this planet's primary life-support system. They provide most of our oxygen and precipitation and drive weather patterns. We count on the seas for food, trade, recreation and commerce. Without healthy oceans, life as we know it would end.

Yet, as discussed in more detail in subsequent portions of my testimony, there is substantial and growing evidence which shows that ocean and coastal resources are being mismanaged and abused. Far too often, decisions involving these resources are made to benefit narrow, short-range special interests, with disregard for or inadequate scientific understanding of potential adverse, long-term consequences. In recent years there has been an alarming increase in the degradation of near-coastal waters, where marine life is more

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plentiful. Much less is known about the deeper ocean, but there are strong signs of damage there, too.

Medical Wastes

This summer, the Atlantic Ocean gave the U.S. a graphic message as she threw back at us some of the more disgusting wastes we humans have tried to entrust to her care. Medical wastes -- the one type of beach litter that would finally awaken a drowsy public to what is happening to the oceans through our neglect and bad habits -- were washed onto beaches from Maine to Florida. Medical wastes are a relatively small, albeit frightening, ocean problem compared to the great volumes of other kinds of waste that flow from human society into the most convenient waste repository around. However, the medical waste problem is serious and must be addressed with stringent and well enforced regulations.

Medical wastes include infectious wastes and non-infectious wastes, many of which may be hazardous for other reasons. EPA has suggested that infectious wastes include: wastes from patients in isolation; cultures and stocks of infectious agents; human blood and blood products; pathological wastes (e.g. tissues and organs); contaminated "sharps" such as needles, scalpel blades and broken glass; and contaminated animal carcasses, body parts and bedding. (Federal Register, vol.53, p. 20142) EPA has recommended handling procedures for these materials, but seems to prefer that regulation be left up to local and state agencies. Consequently, regulations governing medical wastes vary widely across the country, from no regulation at all to stricter controls which may or may not be effective depending on how well they are enforced.

Several state and federal laws governing the treatment of medical wastes have been proposed and are to be commended. However, we are concerned that under these laws medical wastes should include all hazardous medical wastes, not just a narrowly defined category called infectious wastes. In addition, many of the proposed laws apply only to larger medical institutions. Lower limits of waste generation vary, but usually exceed 100 pounds per day, which exempts a multitude of small medical institutions which in combination produce vast quantities of medical waste. As has often been pointed out, only a few contaminated syringes or blood vials in the wrong place pose a threat to human health.

The Oceanic Society supports seven recommendations made by the Natural Resources Defense Council during testimony before the Subcommittee on Fisheries and Wildlife Conservation and the Environment of the House Committee on Merchant Marine and Fisheries on September 6, 1988, in Jones Beach, New York:

1. Classification of medical wastes: "Medical Waste should be listed as hazardous under Subtitle C of RCRA....By listing harmful medical waste, EPA would incorporate it into the existing cradle-to-grave management system that is already in place for hazardous wastes, including the requirements for packaging, transportation, tracking, carefully controlled disposal, and stringent penalties for violations."

2. Incineration: "All medical waste incinerators, whether existing or under consideration, on-site or regional, should be equipped with pollution control devices."

3. Autoclaving: " EPA should be directed to develop testing procedures to demonstrate the effectiveness of autoclaving and to determine proper operating conditions."

4. Disposal in sewers: "A program for eliminating sewer disposal of untreated infectious wastes where full secondary treatment is not assured, as well as of wastes containing toxic metals, radioactive and other wastes that are not treated effectively by sewage treatment plants, should be a priority."

5. Disposal in landfills: "Congress should prohibit landfilling of untreated infectious and other medical wastes that poses hazards to human health and the environment."

6. Expand definition of "hazardous medical wastes":
"The need to expand the regulatory structure to cover all medical wastes that pose hazards to health or the environment is necessitated by the fact that medical wastes other than those defined as infectious may present similar and/or their own sets of risks and threats to public health and the environment."

7. Establish an effective tracking system: "A coded identification should be imprinted on individual medical products, and be sufficiently resistant to exposure to sea water and other elements to prevent obscuring the product's identity.... The second tracking system should

> be the manifest system established under RCRA Subtitle C to track hazardous waste form the point of generation to the point of disposal."

With these measures, the federal government can play an important role in preventing a repeat of the disaster on the east coast beaches this past summer. The Oceanic Society only hopes that as new laws are enacted and effective regulations are implemented and the problem of medical wastes on the beaches fades out, the public and the federal government will not forget about all the other ocean pollution problems which are symbolized by the medical waste.

The Bigger Picture -- Ocean Pollution

We hope the focus and concern over the oceans which came about, in part, when the medical wastes washed ashore will prevail, and that public and governmental attention will extend to the more pervasive and far reaching effects of ocean pollution. An appreciation for the vastness of the problem has been expressed in feature articles in two leading news periodicals, Time and Newsweek (both August 1, 1988), which recognized that hazardous beach litter is only the tip of the iceberg. The world's ocean environments are becoming polluted and biologically degraded at a staggering pace, and remedies are urgently needed.

A. Major Sources of Marine Pollution

A wide array of sources are affecting the quality of the nation's coastal and estuarine environments. Theses major sources include point source discharges, non-point source pollution, and physical or hydrological modifications to the shoreline or estuarine system. Other important sources of pollutants include ocean dumping of sewage sludge, dredge spoil and industrial waste and vessel source pollution. The resulting combination of effects of these sources on the coastal and estuarine environment has been classified into five major "national environmental problems" by the EPA. These are: (i) toxic contamination; (ii) eutrophication; (iii) pathogen contamination; (iv) habitat loss and alteration; and (v) changes in living resources.

Point-source contaminants enter the marine ecosystem through discharges from municipal sewage treatment plants, industrial and commercial facilities and combined sewer overflows (CSOs). Municipal point sources are major contributors of biochemical oxygen demand, pathogens, total nitrogen, and oil and grease. Industrial dischargers are the dominant sources of many organic chemicals and heavy metals, accounting for about 90 percent or more of the inputs of cadmium, mercury, and chlorinated hydrocarbons.

Non-point sources of pollution include runoff from cities, industrial sites, forestry, mining, and farmland, leachate from hazardous waste storage sites and landfills and atmospheric deposition. The varying sources of non-point source pollution generally contribute a large share of fecal coliform bacteria, suspended solids, oil and grease, lead, chromium, pesticides and chlorinated hydrocarbons. While information on the extent of non-point source pollution is limited, the resulting effects are generally considered more pervasive than point sources discharges.

While not a "pollutant" in the classic sense of the word, physical and hydrological modifications are another serious threat to the integrity of coastal and estuarine environments. The activities which result in altering or destroying habitat include dredging of channels, ports and marinas, draining and filling of wetlands, disposal of dredged materials, construction of dams, levees, and other flood control structures, shoreline, residential and commercial development, and diversions of fresh water for irrigation and water supply. Apart from the direct destruction of habitats, physical and hydrological modifications can also destroy the coastal environment's (e.g. wetlands) other functions such as the retention of sediments and nutrients.

B. Effects of Marine Pollution

Several indicators of marine environmental quality point to deteriorating conditions in the coastal marine ecosystems of this country. Increases in (1) episodes of low oxygen concentrations in the water column, (2) fish and shellfish diseases and anomalies, (3) contamination of animal tissues by heavy metals and organics, (4) phytoplankton (algal) blooms including red tides, (5) habitat loss -- especially loss of wetlands, (6) reproductive problems among birds dependent on the marine environment, (7) loss of species diversity and genetic impoverishment in marine ecosystems, and (8) closures of shellfish and fishing areas for human health reasons are symptomatic of a multitude of anthropogenic insults accumulating in our coastal waters.

Though the symptoms are often the same, the particular problems causing marine ecosystem degradation may differ from location to location. I would like to highlight several U.S. estuaries and coastal regions -- though by no means all -- and examine some of their particular problems:

The Gulf of Maine includes the most pristine section of coastal waters to be found along the east coast of the U.S. However, signs of degradation, including increased turbidity, sediment contamination, algal blooms, local anoxia, and localized changes in the benthic community suggest cause for concern. Certain algal blooms have even been found to aggravate the acid rain/acid fog problem. All these changes suggest growing pollution from land drainage aggravated by increased development, and small scale industrial pollution, plus intensive municipal and industrial outfall in the south (i.e. Boston Harbor). It also appears, though, that PAH-contaminated sediments result as well from atmospheric transport of the pollutants.

Massachusetts Bay and Cape Cod Bay, which are part of the Gulf of Maine regional system, are experiencing even greater stress exerted by the urban and industrial development around Boston. High incidence of tumors, disease and structural anomalies have been found in fish and shellfish populations, particularly associated with sediments containing high concentrations of toxics in the vicinity of sewage and industrial discharge. Undertreatment of municipal sewage and indiscriminate discharge of toxic industrial byproducts are the major culprits in this area. The impact on humans in this region is felt primarily by the commercial and recreational fisheries and other recreational interests, with reduced fish and shellfish populations, contaminated and diseased fish and shellfish, and closures of shellfish areas.

Narragansett Bay in Rhode Island is another important fishing and recreational area which is feeling the impact of increased urban and residential development as well as effects of a long history of industrial pollution in rivers feeding the Bay. Urban runoff and fallout from air pollution are currently two of the most potent sources of contamination. Concentrated blooms of one or more species of phytoplankton (algae), local anoxia and areas of sediments heavily laden with heavy metals and toxic organics are characteristic symptoms of pollution experienced in this estuary. Shellfishing is frequently interrupted by bed closures and both fish and shellfish catch are down. The offshore fisheries also depend on this estuarine system as it is an important nursery ground.

The **Long Island Sound/New York Bight** area is considered the area with the most voluminous and concentrated urban and industrial outfalls. Massive algal blooms and periods of oxygen depletion over large areas of bottom waters have become common occurrences off the New York and New Jersey coast, and fish and shellfish kills have sometimes resulted. These are alarming signs of environmental degradation, especially when added to stock depletions, diseases and physical anomalies, and high levels of tissue contaminants (heavy metals and toxic organics) in fish and shellfish. Furthermore, benthic communities have experienced large long-term changes with few species surviving in the most concentrated outfall zones where sediments are laced with excessively high concentrations of toxics.

Aggravating the Bight's problems caused by urban discharge and runoff are the deposition of dredge spoils and the dumping of sewage sludge at designated off-shore sites. Sewage sludge dumping at the "12-Mile Site" off New Jersey, which ended only this past December, is responsible for significant degradation of that area. While the transfer of sludge dumping to the "106-Mile Site" has provided a politically expedient short-term solution to managing that hazardous waste, reports of threats to and depletion of fish stocks in traditional fishing grounds in the vicinity of the 106-Mile Site raise serious questions about the wisdom of using the oceans as a sewer. Needless to say, fishing, recreation, and human health are all threatened in this region, as is emphasized by numerous fish, shellfish and beach closings.

The **Chesapeake Bay** is another infamous area experiencing severe symptoms of pollution. Periods of low oxygen concentration, extensive microalgal blooms and loss of the submerged aquatic vegetation (SAVs) are changes which have been well publicized. The effects on fisheries (e.g., rockfish) and shellfisheries (especially oysters) have been devastating as species become diseased or depleted. Agricultural and urban runoff and atmospheric deposition have been identified as major pollutant sources. Although regulatory efforts have begun, improvements in environmental health have not yet appeared and the threat to this ecosystem remains ominous and immediate.

The southeast coast, as exemplified by **Pamlico and Albemarle Sounds**, is affected primarily by land runoff, residential development and atmospheric deposition of nitrogen. These result in eutrophication of coastal waters as evidenced by algal blooms followed by incidences of low oxygen as the algae decompose. Nutrient enrichment is accompanied by pesticide contamination from agricultural and residential areas draining into rivers and estuaries, with toxic threats to the biota. Submerged seagrass beds are beginning to disappear and fish populations are experiencing disease and depletion.

The **Gulf of Mexico** is a very large region experiencing marine ecosystem degradation resulting from several factors which are more prevalent there than in other coastal regions. Point source discharges are dominated by the petrochemical and chemical facilities which proliferate in the region. This, combined with general urban discharge and relatively shallow waters and poor circulation, has caused an accumulation of environmental hazards resulting in extensive occurrences of low oxygen concentrations and depletions and closures in the recreational and commercial fisheries. Combined with toxic organic chemical pollution, large inputs of nutrients from agricultural runoff from around the Gulf and draining in from the heartland of American agriculture result in eutrophication contributing to low oxygen levels and increased incidences of red tides (microalgal blooms).

Habitat degradation in the Gulf is exemplified by a loss of wetlands which proceeds at an alarming pace -- averaging 50 sq. miles lost each year, and amounting to as much as 80% of the total annual wetland loss in the nation. Dredging and filling operations and freshwater diversion combine with rising sea levels to effect this wetland loss. Marine dependent birds in the Gulf region have been plagued with reproductive difficulties symptomatic of pollution from heavy metals and toxic organics. These maladies, combined with destruction of breeding habitats, have resulted in bird population depletions, including the extinction of the Brown Pelican from this region.

San Francisco Bay, which is ringed by urban development, exhibits most of the maladies exhibited by eastern urban estuaries. In addition, this estuary is affected by freshwater diversions, particularly during spring months when freshwater flows are crucial for fish migration and spawning. The diversion of water for human consumption and utilization has resulted in increased salinities and salt water intrusion, loss of wetlands, and reduced flushing and circulation which compound the effects of urban discharge. Massive reductions in fish populations due to increasingly unfriendly environmental conditions, fish and shellfish disease and structural anomalies, changes in benthic community structure and increased turbidity are attributed to effects of urban discharge and runoff, plus drainage from agricultural lands via rivers feeding the Bay.

Puget Sound in Washington State is a large estuary with intense pollution problems centered around the urbanized portion of the shore which includes Seattle, Tacoma and Everett. Toxic hot spots and areas of eutrophication are found around points of municipal and industrial discharge and at the mouths of industrialized rivers feeding the Sound. Problems are especially intense in some of the numerous embayments and inlets. Hundreds of municipal and industrial pipelines currently discharge wastes into the Sound, and dredge spoil deposition has aggravated the problem in some areas. Non-point source runoff from commercial forest lands and agriculture add to the problem of urban outfalls. As in other urban coastal areas, fish disease, shellfish bed closures and algal blooms are symptomatic of an ecosystem going awry.

The coastal waters of **Alaska** feel the impacts of a few large ocean and land based industries. The Gulf of Alaska is impacted by the forestry industry due to runoff and transportation of logs, and it is threatened by the potential of catastrophic oil spills from tankers transporting oil. The Bearing Sea is a prime fishing area and as such is subject to pollution from disposal of fish-processing wastes. It is also affected by oil spills and discharges from mining and dredging operations. The Arctic region marine systems are especially threatened by on and off-shore oil development.

C. National Studies and Reports

Within the Federal government, several reports prepared in recent years by agencies represented at this hearing reinforce the need for research and action to protect our marine and coastal areas. In 1985, the Environmental Protection Agency initiated its "Near Coastal Waters (NCW) Strategic Planning Initiative," a multi-year effort to maintain and enhance near coastal water environmental quality. As the first stage of the NCW initiative, EPA's Office of Marine and Estuarine Protection released a "Strategic Options" paper in August, 1986 that substantiates the urgent situation we are facing. Quoting from the paper's introduction (footnotes omitted):

> Degradation of the near coastal water environment has become a critical national problem. The ecological, economic, recreational and aesthetic integrity of near coastal water systems in the United States is threatened daily by the cumulative impacts of a multitude of activities within the coastal drainage basins, in the near coastal waters, and on the oceans. Portions of near coastal water and shore habitats in every geographic region of the country and in every coastal state have been found to be degraded to a moderate or severe degree.

More recently, Congress' Office of Technology Assessment (OTA) issued a report titled Wastes in Marine Environments (April 1987), with its principal findings being "that estuaries and coastal waters are in deep trouble around the Nation, and that more coordinated waste management efforts are needed in many areas." While the OTA report found that "the health of the open ocean generally appears to be better than that of estuaries and coastal waters...," that finding contains an important qualification, i.e., that "considerable uncertainty still exists, however, about the ability to discern impacts, particularly long-term ones, that may have occurred in the open ocean."

In October, 1987, the National Oceanic and Atmospheric Administration's (NOAA) Estuarine Programs Office released a report titled NOAA Estuarine and Coastal Science Framework to provide long-term scientific direction for addressing four critical estuarine and coastal ocean problems: freshwater inflow and circulation problems; toxics, nutrients, and pathogens; habitat degradation; and declines in living resources. Based on an examination of those problem areas, the report's introduction notes that:

> The evidence clearly indicates that the health of our estuaries is declining. It is time to re-examine what should be done to conserve one of the Nation's

> most valuable resources. Unfortunately, the effects of human activities and natural changes to our estuarine and coastal environment are not well understood.

In addition to these government studies, two non-governmental reports merit special mention as part of any national perspective on the health of ocean and coastal environment. The first, published in 1986 by the Coast Alliance, an umbrella organization comprised of representatives of most of the Nation's major environmental groups, And Two if by Sea: Fighting the Attack on America's Coasts is both a primer and a guide for action. And Two if by Sea provides persuasive evidence that our coastal areas are in trouble, with special emphasis on the growing threats caused by coastal hazards (especially ill-conceived development in high-risk areas), coastal pollution, energy and minerals development, and ocean dumping.

The second non-governmental report, titled Saving our Bays, Sounds and the Great Lakes: A National Agenda, released in April, 1988, by Save the Bay, Inc. of Rhode Island, resulted from a national conference of conservation groups, including my organization. It describes the dire state of health of our nation's estuaries and recommends important steps that need to be taken to control and prevent water pollution. and suggests a five-point "National Agenda" for action. We wholeheartedly endorsed the report's findings and recommendations, several of which will require comprehensive research and monitoring programs to implement.

The array of reports referenced above convey, in detail, both the severity and magnitude of the problems facing our marine and coastal waters. More importantly, each of the reports contains numerous recommendations for action that deserve to be heeded as we collectively address, and redress, the existing situation.

While the principal focus of all of these reports is on near-coastal waters, as noted earlier, our inadequate understanding of oceanic processes and impacts of human activities in the deeper ocean are cause for caution. In important respects, we can use estuaries as mesocosms -- experimental subsets of the whole ecosystem -- of the open ocean. Just as scientists use mesocosms to predict ecosystem responses to specific stresses in estuaries, we can extrapolate the increasing stresses in estuaries to the oceans. Because of the tremendous size of the open ocean, estuarine-type responses to stress or pollutants normally take much longer to be measured. But that is only a function of time, or inadequate measurements. Given the difficulties of responding to crisis situations in smaller, estuarine systems, the problem of protecting the open ocean becomes orders of magnitude more serious if we wait until similar crisis situations become apparent.

D. Government Policy and Regulation of Ocean Pollution

Pollutant inputs are regulated by various levels of government and different agencies under a plethora of laws and regulations. While EPA has the primary responsibility, their current approach is on a permit-by-permit basis and lacks a comprehensive approach. Given the complexity and breadth of the above inputs into the marine environment, a comprehensive approach to the management of waste inputs which focuses on all environmental threats to specific water bodies and regional areas is necessary. However, without specific changes in the current programs, and absent a national policy on the protection of the marine and coastal environment, a comprehensive management system is unlikely.

In the absence of such a policy, it is essential that steps be taken to ensure that each pollutant source be addressed. Too often, one polluter or regulator points the finger at another, and others blame others, with the end result being incremental and cumulative pollutant loadings that reach crisis proportions before corrective steps are taken.

There is one national/international policy matter that merits special consideration -- President Reagan's March, 1983, Exclusive Economic Zone (EEZ) Proclamation. As has been noted in various commentaries, the United States' EEZ encompasses some 3.9 billion acres, more than one and one-half times the 2.3 billion land acres of the United States and its territories. Within its EEZ, the U.S. has sovereign rights over all marine resources -- living and non-living -- subject to certain conservation standards. It has control of virtually all economic uses within that zone, with exceptions for navigation, and it has jurisdiction to regulate marine research and protect the marine environment.

The importance of EEZ resources for the future development of many of the world's nations is substantial. Over seventy percent of the world's population lives in coastal areas. Increasingly, the United States and other nations are turning to EEZ areas for food, energy and for strengthened economies. Globally, forty percent of our planet's ocean areas fall within 200 miles of adjacent coasts.

Given the magnitude and severity of marine pollution problems, as discussed above, it is imperative for the United States to develop an integrated and comprehensive approach to addressing ocean and coastal issues if we are to use, manage and protect our living and non-living resources. As an important step in that direction, a comprehensive assessment of the United States' EEZ policy would be most appropriate. Given the relatively recent status of the President's 1983 EEZ Proclamation, a major opportunity still exists to put in place effective EEZ strategies -- including environmentally oriented measures -- before less effective choices become entrenched.

Pieces of that assessment have been done -- such as the excellent analysis and recommendations concerning Federal/State relationships prepared by the Coastal States Organization in its April, 1987 report titled Coastal States and the Exclusive Economic Zone. That report, and other EEZ- and ocean policy-related studies of recent years serve as an excellent foundation for undertaking a comprehensive assessment of U.S. EEZ policies. With such an assessment in hand, U.S. policy makers and the public could then make informed decisions regarding the development and implementation of a sound and balanced EEZ oceans policy.

E. International Perspective

Although the focus of this hearing is on the United States, the oceans do not recognize national boundaries, so I'd like to briefly take a global view of the problem of ocean abuse. An important report that presents a compelling global perspective was issued last year by the World Commission on Environment and Development. Entitled Our Common Future, it presents the results of a special four-year study . In preparing that report, leaders from twenty-one nations around the globe, including Norway's Prime Minister, Gro Harlem Brundtland as chairperson, and William Ruckelshaus as the U.S. representative, were charged with the task of proposing long-term environmental strategies for achieving sustainable development to the year 2000 and beyond. The Commission was asked to recommend cooperative actions between developed and developing countries, emphasizing the relationships between people, resources, environment and development. While their mandate was far broader than ocean-related matters, much of the report is indirectly if not directly relevant to the world's oceans.

Among a wide range of topics, Our Common Future addresses ocean issues in a chapter titled, "Managing the Commons." In that chapter, there is a call for action premised on findings that "[t]oday, the living resources of the sea are under threat from over-exploitation, pollution and land-based development." While their mandate was far broader than ocean-related matters, nonetheless Our Common Future states that (p. 265):

> Looking to the next century, the Commission is convinced that sustainable development, if not survival itself, depends on significant advances in the management of the oceans. Considerable changes will be required in our institutions and policies and more resources will have to be committed to oceans management.

The report proposes a number of measures to improve ocean management, including strengthened controls for ocean disposal of hazardous and nuclear wastes, improved fisheries management, reinforcing cooperation in semi-enclosed and regional seas (like the Gulf of Maine and the Gulf of Mexico), and efforts to advance and bring into force the Law of the Sea Convention that was opened for signature in 1982.

The Oceanic Society strongly endorses the findings and recommendations on ocean issues that are elaborated in Our Common Future. In order to respond to the Commission's concerns about "survival itself" on this planet in the 21st century -- only a few years away -- concerted action is needed, now.

As we all know, the only boundaries transecting ocean ecosystems are human-created political ones, and these cannot prevent the spread of pollution. Therefore, each nation -- acting on its own and through such international arrangements as the Law of the Sea Convention, which merits ratification by the U.S. and entry into force as soon as possible -- has a responsibility to protect the oceans from abuse and overuse, and a corresponding interest and right to see that other nations do the same.

Research and Monitoring Needs

One of the topics on which you have asked me to testify is ocean pollution research and monitoring. As a scientist, I believe that knowledge should lead people in the right direction, and research yields knowledge. Our current understanding of physical, chemical, geological and biological processes in the oceans is limited. We still have much to learn about how the ocean and the life within it respond to pollution and how those responses can affect the global environment and ultimately the survival of our own species.

Unfortunately, what we do know has not prompted enough action to turn the advancing tide of degradation in marine environments. In part this is because our knowledge is not complete, leaving the severity of current damage and the risk of future damage open to debate. Sadly and perhaps fatally, the human response to not having proof of pending disaster is to do nothing (or to go on doing whatever activities are under suspicion) while awaiting absolute proof of cause and effect. Like the proverbial ostrich, we bury our heads in the sand and hope the threat will go away.

Given this need for proof, and given the consequences if we do not respond appropriately to the environmental crisis in the oceans (as well as in the atmosphere and on land), we must increase our environmental research and monitoring programs, and we must increase them in a big way. Token programs will not suffice. It is time to make the choice between spending money to save our earth or spending money to destroy it. We can't have it both ways.

Basic and applied research, baseline studies and monitoring are all essential to understanding and assessing marine ecosystems. If they are to be done properly and comprehensively, those kinds of programs cost a lot of money; and implementing the management programs dictated by the results of the research will cost even more money. We are at a point in the history of the human species where we will have to purchase a safe environment. If we are not willing to make the necessary expenditures, we cannot expect to survive the environmental changes we as a species are bringing about.

Basic and applied research provides information on how a system and its components respond to specific stresses. With this information, predictions can be made about the likely consequences of proposed activities in marine environments. Based on these predictions, decisions can be made about whether an activity should be undertaken and/or whether modifications should be made in the procedure.

Monitoring, must be carried out with environmentally sensitive activities to document the consequences. Since the consequences are not always reversible, good management decisions cannot always be made after the fact. Effective, well designed monitoring allows us to determine whether an ongoing activity is causing undesirable changes and whether management practices need to be modified to ameliorate the effects.

The combination of basic and applied research and baseline studies could provide the basis for designing effective monitoring programs to be carried out by institutions able to commit staff and equipment for long enough time periods to make monitoring meaningful. This calls for the government to vastly increase its support of basic and applied research by outstanding scientists at our nation's universities. It also requires expanded applied research and monitoring programs to be designed and implemented by outstanding scientists in agencies such as NOAA and EPA. These programs should be carried out within the agencies and not parcelled out as disjointed pieces of work to an uncoordinated multitude of consulting firms.

In addition to the research and monitoring programs themselves, there needs to be a mechanism to ensure effective interfacing between researchers and regulators/managers. It is imperative that the implications of research be made clear to those regulating activities in the marine environment. This requires an exchange in both directions. Regulations must be based on the knowledge provided by research, and monitoring programs must accompany management programs to allow continual adaptation of management practices to environmental responses.

Furthermore, there should be room for the interested public to participate at this interface between scientists and managers. Information gained from research programs should be available to the public in a form they can understand and with the benefit of expert interpretation, and in turn the public should have a forum for involvement in management decisions.

Conclusion

Although the oceans have been in existence for billions of years, their degradation is a process which began only recently, a by-product of an increasingly crowded and complex world. The responsibility is ours to protect those aeons of natural investment. Other problems may seem more immediate, but few are as pervasive in their implications.

Underlying my testimony today, an ecological ethic is essential if we are going to ensure the protection, conservation and wise use of our vital marine resources. With such an ethic firmly in place, policies affecting the future of the oceans and near-coastal waters can and must be developed, implemented and carried out with environmental consequences and respect for the linkages in the ecosystem as primary considerations.

Again, thank you for the opportunity to participate in today's hearing. I would be happy to answer any questions that you might have.

* * *

Mr. McMillen. I thank both of you for your testimony, and we have a number of questions that we would like to proceed with. It seems that both of you have pointed up the problem of monitoring and the insufficiency of the current monitoring that is going on in the Bay. Will, you pointed out that a lot of the monitoring stations in the Bay are poorly placed and, although they are registering PCBs in the bluefish and the like, more extensive monitoring may give us a grasp of the dimensions of the problem.

I think you have hit on a very important area, because clearly in the case of the testimony from NOAA and the EPA, there seems to be an inadequate data bank that they are dealing with. As a result of that, we are not getting the kind of public policy initiatives that we should be getting. I would be curious for you to further elaborate on that matter, if you would.

Mr. Baker. Well, I think you heard in the testimony from NOAA that they may be trying to so hard not to monitor near industrial outfalls to skew the figures, that they have gone overboard and they have actually avoided looking at areas of high industrial contamination. I don't know how you can do the detective work unless you have that information, so I agree with you entirely. It's a matter of information as well as a moving on and making decisions based upon the information we now have, so that was our point.

Mr. McMillen. Several of the bills in front of Congress, as you know, have some increased funding for this kind of activity. I think this is particularly important. In your testimony you pointed out the $8 million in NOAA research funds currently going to the Bay. I think you also pointed out your concern as to who is setting the priorities as to where those $8 million are going. What are your thoughts on that? How should the priorities be set?

Mr. Baker. Well, you know, Congressman, the Bay program has been so heralded, and rightfully so, for bringing the States together and working as one on problems in Chesapeake Bay. This was not even, Maryland and Virginia were not even speaking to one another about Bay problems back in the seventies, and certainly not Pennsylvania. A great deal has been accomplished there, but in terms of the Federal agencies—NOAA, EPA, Interior, and especially the Department of Defense, which we didn't even touch on—I think the coordination has been less than desirable. So for this particular question, where NOAA is setting research priorities, setting where they are going to do their sampling, they at least ought to be talking with EPA and the States so that that decision is not made in a vacuum but is made as part of a larger strategy.

Mr. McMillen. Ms. Miller?

Ms. Miller. Well, the monitoring in general is something that really is a very expensive proposition, and to do it correctly is very expensive, but is must be done correctly or it's a total waste of money, because if the measurements aren't enough or aren't in the right place, then you might as well not take them at all. I think NOAA's program is good but it isn't enough. It has to be expanded, and I agree with Mr. Baker that consultation with the States and EPA to coordinate the efforts would be beneficial, but in general the program just needs to be expanded.

Mr. McMillen. In your opinion, why has the EPA not taken action on medical waste? Why are we here 12 years later and only when it is hitting us in the face, we are seeing this stuff regurgitate on our shores, are they beginning to form a task force and take some action? Why is this the case, in your view?

Ms. MILLER. Well, I am not sure why. I think the EPA has a record of not responding very rapidly until really pressed to do so, and I suppose this is just a continuation of that record. They would prefer to have some other group take the heat, such as local and State governments. I think it's inertia. They certainly have the power to do so in existing legislation.

Mr. BAKER. This is not untypical of the way we manage our other problems in this world. We are a crisis management society and until it becomes a crisis, we don't begin to take the really hard steps necessary.

That also plays into the question of ocean dumping. What are we doing sitting here, when it has become a crisis, trying to decide how to solve it? Why wasn't it done earlier? You shouldn't have to ask that question now.

Mr. McMILLEN. It seems like we pass laws and now we hope that they are implemented, but we are clearly seeing a case where NOAA does not want to monitor industrial locations because of the data that they might get. The EPA doesn't want to promulgate regulations on medical waste, even though they have had the legal authority to do so for 12 years, until the stuff is literally on our shores. Clearly we have to be more vigilant on that, and that is one of the reasons why I complimented Governor Schaefer earlier, because I think he saw a problem and didn't hesitate to find a solution to it.

Why don't I defer for a moment to our chairman for some questions?

Mr. SCHEUER. Well, this particular panel is the source of great frustration to me. The sad part of it is, we know what to do. We know what has to be done. We know what has to be studied. You two have given us a brilliant exposition of what the Government should have done long ago. You are both right on the mark. I don't have a single reservation about a word, a sentence, that either of you have spoken.

It's embarrassing for me to say at this point in time, in the first of October or whatever it is, 1988, to ask NOAA and EPA if they wouldn't kindly give Congress some guidance on how we should be disposing of these toxic wastes and solid wastes. I mean, it's truly embarrassing. We have been asking them these questions for years, and you heard what the answer was.

I think if I were sitting in that seat, I would have absolutely wanted to crawl into a knothole someplace from sheer embarrassment at having to give these two Members of Congress and the committee the answers that they gave us. Maybe I'm too thin-skinned. I would have been mortified with embarrassment to have given those utterly unhelpful and unpromising answers.

When is EPA and when is NOAA going to get off the dime to give we policymakers—there are only 535 of them in the House and the Senate who have to make these decisions— when are they going to give them the information they need to make intelligent judgments? Listening to you two, you were both professional, knowledgeable, informed, thoughtful, and I couldn't disagree with a word that you have said.

I am in a blue funk. Where do we go from here? How do we get some leadership in our Government to face up to the thoughtful, intelligent, absolutely indispensible questions that you have asked and to which we need answers? It was a terrific panel and I am grateful to you both.

Mr. McMILLEN. Thank you, Mr. Chairman. We all share in that frustration. I guess the disconcerting thought is, what happens if nothing is done? What happens if we don't get the information we need to properly craft the public policy measures that can deal with these issues? In your view, what would be the short-term and long-term consequences of continuing to pollute the oceans at the current rate, continuing to dump 106 miles off the coast of New York, continuing to disregard our bodies of water? I would just be curious as to, have you given some thoughts to the long view?

Ms. MILLER. Well, in short, the oceans would die.

Mr. SCHEUER. Excuse me?

Ms. MILLER. In short, the oceans would die if we do not—

Mr. SCHEUER. They are already sick.

Ms. MILLER. They are already there, going in that direction, yes. The idea that we can throw things into the ocean and then come back a few days later and measure and find out that we can't measure it, or find things that we threw into it, and therefore they have disappeared, that is crazy. They haven't disappeared. They are in the ocean. They are having their effect. You have to monitor it in other ways than just going out there and measuring whether what you put in a particular drop of water is there four hours later.

Mr. BAKER. Let me just give you a very brief example of exactly what Ms. Miller is talking about. This summer 200,000 gallons of oil was spilled in the Chesapeake from a barge that literally split in half. The experts within a matter of hours said, "That spill, the effect of that spill, is minimal."

What was happening is that the light fractions in the oil were evaporating and the heavier fractions, some of the more toxic, were sinking, being taken up by organisms, getting mixed into the sediment, but you couldn't see it, so the effect was "minimal" on the environment. That's exactly the type of thing we are concerned about.

In the long range I think, in addition to all the critters and all the biological effects, the economy of this Nation is going to start to suffer, and maybe that is when you are going to see some real action be taken. We have a great resource in this country, not only with our coastal areas but all of our natural resources, and we have to start respecting them.

If you just want to run boats across the surface of the water, the Chesapeake Bay and the oceans, Long Island Sound, what have you, we can put anything we want in there, unless it catches fire like the Cuyahoga River, but basically you can put anything you want in it. But if you want something more in your marine environment, you had better start taking action now because, as Walter Cronkite said when he came to the Chesapeake Bay about six years ago, you reach a point of no return from which you can't come back. I don't think we have reached that point yet but we are edging up closer and closer to it each year.

Mr. McMillen. If you had to give, if you were a teacher in a classroom and you had to grade the EPA and NOAA on the amount of attention that they are devoting to our coastal environment, what grade would you give them?

Mr. Scheuer. Excuse me. Can I put a footnote on that question? I think we have to factor into this question, the negative and the destructive input of the Office of Management and Budget. To be 100 percent fair with EPA and NOAA, I suspect that some of those guys would like to do things that the administration simply won't permit them to do. We can't quantify that at the present time, but in venting my frustration I probably overlooked saying that maybe you guys wanted to do it and it was the hatchet men down at 1600 Pennsylvania Avenue who simply wouldn't let you do it. I think there is some of that in the equation, to be fair. Excuse me.

Mr. McMillen. I think that is a very fair statement. I know this is a harsh question, but I am curious—

Mr. Baker. Mr. Chairman, that was exactly the point I was going to raise. I don't know as much as you two gentlemen do about where the source of inaction in terms of requesting more dollars is, but simply to say, with medical waste, "EPA must manage medical waste like it does other hazardous waste under RCRA," would create an enormous financial burden on the agency.

Well, why, if they thought that was necessary, haven't they asked for the funding, or who is stifling that funding? That's the question that needs to be asked. EPA is being asked to do more and more, and NOAA as well, with less and less funds. So I think the individuals working there, and certainly the three gentlemen who were here today, probably want—as you say—to do more and to address the problems, but something has happened. I don't know why they are not getting the funding, why it is not the national priority it should be, the grave national priority that—

Mr. McMillen. I think you make a very good point. It is good people trying to do a good job with little resources, and we need certainly to do more in that—

Mr. Scheuer. Just to give you some idea of really how right you are, in real dollars since 1980 EPA's research funds have been cut 40 percent in, real dollars, and 20 percent of their scientists have left them in despair, including many of their very best scientists, the type of guys who could get very excellent jobs in the great big, wide world out there. So it's a pitiful situation, and much of the blame I think probably rests at 1600 Pennsylvania Avenue and the budget slashers at OMB, the Office of Management and Budget.

Mr. McMillen. We appreciate your thoughts on this issue. We were able to get hold of a few pictures that I think are poignant reminders of the legacy we leave our children, that we all went to the beaches and saw them to be clean and healthy. Obviously we are all worried about the future for our kids. I think it is ofttimes brought out that the Chesapeake Bay is one of those precious resources, that the nation of Japan, with 100 million people, could feed their whole nation on a healthy Bay, so it is incumbent upon all of us to maintain that legacy.

I think the points that we brought out in this hearing and the purview of our responsibility has to do with the research efforts that are being done in these areas, and clearly they are inadequate. We need more data to make the tough policy decisions on medical waste, on ocean dumping, on the continued cleanup of the Bay.

I thank all of you for your testimony today. It is particularly timely, as I said, because we have a number of pieces of legislation coming up this week on broad bans on ocean dumping, more specific bans on medical waste, and it has been very, very helpful as we deliberate on these matters to have your input. I again thank you for coming this morning. I thank you for your testimony, and the hearing is adjourned at the call of the Chair.

[Whereupon, at 10:55 a.m., the subcommittee adjourned, to reconvene at the call of the Chair.]

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